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THE UNIVERSITY OF ALBERTA

THE RUSSIAN IMPERATIVE: SELECTED PROBLEMS IN ANALYSIS

by

© CHRISTOPHER J. DALY

A THESIS
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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research, for acceptance, a thesis entitled THE RUSSIAN IMPERATIVE: SELECTED PROBLEMS IN ANALYSIS submitted by CHRISTOPHER J. DALY in partial fulfillment of the requirements for the degree of Master of Arts in Slavic Linguistics.

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Date April 22, 1975

TO MY PARENTS

AND GRANDMOTHER

ABSTRACT

The purpose of this thesis is to investigate the problems of analysis which may be observed in various studies of the Russian imperative and to establish what points must be taken as prerequisite to a more definitive analysis.

After an introductory chapter in which necessary background information is given, including historical linguistic studies, dialectological information and a brief comparative survey of the imperative within the Slavic languages, the major existing synchronic studies of the Russian imperative are reviewed. No individual study can be singled out as definitive.

Chapter Three deals with the major studies of the Russian imperative from the viewpoint of generative linguistics. A review of these analyses illustrates that not only is no complete solution available but that the analysis is more complex than has previously been thought.

The final chapter deals with several of the more important problems which the available studies have so far stated but have been unable to solve in an adequate fashion. These problems are examined in some depth and either tentative solutions are proposed or the most profitable direction for further research is demonstrated.

In the Summary and Conclusions, the seven conclusions which this thesis has attained are reviewed and the most important areas for future study pointed out. While this thesis is unable to present a definitive solution to the topic it finds its purpose in that it establishes certain prerequisite points which any further studies must take into account in order to solve the problems in analysis.

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EXPLANATORY TABLE FOR NOTATIONS AND CONVENTIONS

1. The transcription system is that used in the Slavic Department of the University of Alberta for linguistics.

2. Methods of distinguishing various forms:

   __________, e.g. péč' is used for transliteration from Cyrillic.

   [   ], e.g. [p'eč] is used for phonetic representations in traditional studies.

   /   /, e.g. /p'eč/ is used for phonemic representations in traditional studies and for surface representations in generative accounts.

   Capitalization, e.g. POK is used for underlying representations for lexical items, and for base forms of individual segments in generative accounts.

3. Stress is marked only on transliterated forms.

4. Mnemonic tags:

   (K → Č) stands for velar /k,g,x/ to palatal /č,ǯ,š/ alternations; (K → Č) rule represents a rule which accomplishes this alternation.

   (T → Č) stands for a dental /t,d,s,z/ to palatal /č,ǯ,š,ž/ alternation; (T → Č) rule represents a rule which accomplishes this alternation.

   (K → C) stands for a velar /k,g,x/ to dental /c,ʒ,s/ alternation; (K → C) rule represents a rule which accomplishes this alternation.

(ø → l) indicates insertion of an /l/ after labials /p,b,m,f,v/; a (ø → l) rule is one which accomplishes this process.

5. Transitive or Substitutive softening (TS).

   As identified by Halle (1961: 149) is: "consonant phonemes are replaced according to the following table:

t	k	s	x	z	d	g	st	sk	zd	zg	p	f	b	vl	ml	l	r
č	č	š	š	ž	ž	ž	šč	šč	žž	žž	pl'	fl'	bl'	vl'	ml'	l'	r' "

   A transitive softening rule will be of the form C → TS/_____, which is to be read, "any consonant becomes transitively softened in the following environment."

6. Other conventions for dealing with phonology are consistent with Harms (1968).

7. Conventions for representing syntactic constructions are basically similar to those in Chomsky (1965).

INTRODUCTION

The topic of the Russian verbal system has received considerable attention from linguists for more than a century. Despite the large amount of research which has been conducted, a definitive analysis does not exist. Indeed the more the subject is investigated the more intricate the problems appear. On the surface, the imperative seems simple. When one examines analyses of the Russian conjugation based on several different theoretical principles it becomes apparent that the command form of the verb presents several difficult problems. These problems, it will be seen, touch on several controversial areas of linguistic theory, as well as extend into aspects of language study not adequately investigated at this time.

It will not be possible, therefore, to present a definitive analysis of the question, for this is a topic much too large to be handled here. In this thesis we will examine the chief analyses of the Russian imperative which exist today. The most critical problems will be isolated and examined in terms of past research, and tentative solutions will be proposed for several aspects of these problems. We will establish what prerequisites a definitive analysis of the Russian imperative must contain and hopefully point out the direction in which future research may most profitably be conducted. The value of small studies such as this one, lies in their ability to focus on the major concerns of the scholar and sort out and clarify the often confusing claims of research which has been produced in the past.

After presenting a background chapter, the Russian imperative will be examined first from a traditional point of view, concluding with the clearest and simplest presentation within this framework, i.e. Vinogradov's analysis.

This will be followed by a fairly extensive treatment of the topic in terms of a generative analysis.

It is necessary to preface the generative analysis by stating several presuppositions under which the entire treatment is made. They are:

(a) The various processes of consonant alternations which will be discussed in some depth are all considered to be phonologically conditioned rules. This is in accordance with the majority of the studies in this topic.

(b) The term "naturalness" will frequently be used. We take as a working definition that proposed by Harms (1968: 26), "The notion of 'natural class' involves two considerations. First, it is a class of segments that can be specified with fewer features than any individual member of the class,... Second, the features shared by the class members should be limited to those which have a certain degree of phonetic plausibility." Rules which bring about conditions compatible with the above definition are said to be natural. It is a methodological given in this thesis that phonological rules should strive toward naturalness.

(c) Retrospective criticism of obsolete theoretical practices will be made, based on the belief that linguistic theory has progressed over time. It is necessary to point out, however, that the validity of such criticism varies with the time span involved. This is especially true concerning naturalness considerations; earlier linguists can be faulted for not writing natural rules but it must be borne in mind that they did not strive to do so within their metatheory.

One aspect of this analysis deserves special mention at this point. Due to the inclusive nature of generative linguistic theory, we are forced to touch upon, in a collateral way, certain aspects of linguistic analysis which are problematical in themselves and whose implications in the largest sense are obviously beyond the constrainable limits of this presentation. It is necessary to accept as valid such conclusions in an a priori manner, for without such necessary givens, it would be impossible to proceed further.

CHAPTER ONE

PART I: DIACHRONIC SURVEY OF THE RUSSIAN IMPERATIVE

Before discussing the Russian imperative from a synchronic[1] viewpoint, it will be advantageous to examine its historical development. A basic understanding of the diachronic processes involved can often help clarify baffling problems in the contemporary language.

Černyx (1962: 267-268) has shown that the Proto-Slavic imperative with its desinence /oi/, which became /i/ or /ě/, is a derivative from the Indo-European optative, compare Greek ferois with Old East Slavic beri!

The following paradigm illustrates the Old East Slavic imperative in its various forms in verbs of distinct classes; it is adapted from Černyx (1962: 268).

OLD EAST SLAVIC IMPERATIVE

person	number	verbs			
second	singular[2]	nesi	peci	piši	prosi
first	plural	nesěmŭ	pecěmŭ	pišimŭ	prosimŭ
second	plural	nesěte	pecěte	pišite	prosite
first	dual	nesěvě	pecěvě	pišivě	prosivě
non-first	dual	nesěta	pecěta	pišita	prosita

---

[1] For a definition of the terms "synchronic" and "diachronic" consult Lyons (1968: 45 ff.).

[2] Ivanov (1960: 368) states that the second person singular form was identical to the seldom used third singular imperative. There were no first singular or third plural imperatives, Kiparsky (1967: 194-195).

Several differences between the Old East Slavic and the Modern Russian imperative are readily observed.

(1) Two theme vowels /i/ and /ě/ were used in Old East Slavic for the imperative, whereas in the modern language only /i/ is found. The exact historical processes by which both vowels came from the diphthong */oi/ are not well understood. Ivanov (p. 134) suggests that it depended on accentological circumstances still to be explained. He attributes this observation to Seliščev. Elsewhere Ivanov proposes that the /i/ may have come from an */oi/ but the /ě/ came from a diphthong */ei/. This would have to be preceded by a change of /o/ to /e/ which has not yet been correctly formalized (p. 397, fn.1). As this two-theme vowel system was used, many verbs which today have coincidence of the first person plural present tense and the first person plural imperative had separate forms in Old East Slavic, e.g. Durnovo (p. 334) *berěmŭ* versus *beremŭ*.

(2) The presence of the dual imperative forms and the above mentioned differences in the first person plural made the entire system more complex.

(3) Although the above table does not illustrate the fact, Ivanov (1964: 397) and Borkovskij and Kuznecov (1963: 272) point out that a change in the stem vowel occurs in certain imperatives. This phenomenon is termed "stem shortening" by the latter authors (p. 272). It is interesting to note

that this change is observed in those verbs which illustrate the (K → C) alternation, e.g. peku vs. pĭci!, teku vs. tĭci! Ivanov (p. 397).

(4) Two different kinds of consonant alternations can be observed. Consider first the (K → Č) alternations. As both Ivanov (p. 134) and Černyx (p. 268) as well as numerous other historical linguists point out, this alternation resulted from the change of the */oi/ desinence to /i/ and /é/. When this change occurred, a new series of front vowels appeared. When these vowels were located after velar consonants /k,g,x/ the latter changed to dental consonants /c,z,s'/. The usual name of this process is the "Second Palatalization".

The other alternation, the (T → Č) change comes from a different source, e.g. pisati vs. piši!. Ivanov (p. 138) and others explain this as the result of the palatalization of a consonant +/j/ cluster. This process is often called "jotation", based on the name of the phoneme /j/, e.g. *pisjōn - sj > š —— pišu (Ivanov p. 138).

How and at what times did these changes occur which transformed the Old East Slavic imperative into that of the contemporary language? The major changes and the approximate dates of their occurrence are:

(1) The truncation of the imperative /i/ desinence. Unstressed /i/ changed to /ø/ if preceeded by a consonant and to /j/ if preceeded by a vowel, e.g. *budi, *znai > búd', znáj. The unstressed ending is preserved if it follows two

or more consonants or if the prefix of the verb is /vy/, e.g. *prygni!*, *vygjani!* (Durnovo pp. 333-334). The time span over which this change took place is rather lengthy. It has been found in the Novgorod birch bark texts from the Thirteenth Century (Černyx p. 269). Although he dates the inception of this change from that time, Černyx notes further that there are texts from Moscow as late as 1647 which retain such truncated forms as *izgotóvi!* (p. 269).

(2) Generalization of the /i/ theme vowel.

The system of two theme vowels has broken down. All /ě/ theme vowels have been replaced by /i/, e.g. *iděte!* > *idite!*. This change preceeded that of truncation as witnessed by forms of the following type, *staněte!* > *stanite!* > *stan'te!* (Durnovo pp. 334-335). That author notes documentation from the year 1282 (p. 335), but other linguists have found much earlier instances. Černyx (p. 269) points out that there is confusion of the theme vowels in the Ostromir Gospel (1056) and in the Novgorod birch bark texts (1270). Kiparsky (1967: 194) considers that the change was virtually complete by 1400.

(3) The loss of the distinction in the theme vowels has resulted in the complete coincidence of the first person plural imperative with the first person plural present tense, as mentioned above. Modern Russian is unique among the Slavic languages in having preserved a syntactic first person plural imperative but having lost a separate morphological form. For imperfec-

tive verbs the first person plural of the verb *byt'* is used plus the infinitive of the main verb, e.g. *budem stojat'!*. If the verb is perfective the form coincides with the first person plural of the non-past tense, e.g. *spojem!* (Durnovo p. 334). In addition, the desinence /te/ may be added to either form, *budemte stojat'!*, and *spojemte!* The exact function of this desinence is a matter of controversy. Some scholars consider it to be a duality marker related to phrases such as *my s toboj* (Vinogradov 1947: 467), while others appear to connect it with inclusivity relations, (Ružička 1966: 11), (Durnovo p. 334). Kiparsky (1967: 194) and Černyx (p. 269) all place the beginning of this change in the Thirteenth Century. Černyx points out that the first recorded appearance of the /te/ suffix with first person plural imperatives is 1619.

(4) Loss of the other imperative forms.

The loss of the dual imperative forms is coincident with the loss of the duality in general and is, therefore, not particularly interesting to our discussion. Durnovo (p. 333) states that the dual disappeared in speech in the Thirteenth Century and in the written language by the Fifteenth Century.

The occasional use of the second person singular imperative forms for the third person singular were gradually supplanted by the use of constructions with the auxiliary *pust'*, Ivanov (p. 397). Kiparsky (1967: 195) mentions, however, that this usage persisted in the non-literary genres until the Eighteenth Century.

(5) Loss of the consonant alternations.

Of the consonant alternations mentioned above, (T → Č) has not been lost and has come down to the present time in Russian, e.g. pisat', piši!.

The modern Russian imperative for "to bake" is peki! and similarly all other verbs whose stem exhibited the (K → C) alternation in the historic form. On the surface it appears that Russian has nullified the effects of the palatalization.

Durnovo (p. 336) claims this change is the result of analogy with other forms of the verb involved. He dates the change in the Fourteenth Century. Kiparsky (1967: 192) suggests that this change began earlier, possibly c. 1200, although he points out that forms in the texts do appear with the alternation until late in the Fifteenth Century.

There appears to be significant disagreement among scholars as to the origin and chronology of this change. Further evidence should be considered. Potebnja (1971: 173) notes the existence in the Primary Novgorod chronicle of forms such as sekite!. Examination of the Novgorod birch barks texts (Arcixovskij 1955 ff.) turns up only two examples of possible (K → C) alternations in verbs. We find mogi! (text no. 227, 1956-57: 50; Thirteenth Century) and pomozi! (text no. 203, 1956-57: 24; Twelfth or Thirteenth Century).

The latter phrase appears in the phrase "help me God!", which may mean it could be a set ecclesiastical phrase and not a form occurring in the spoken language. The existence of data such as these when viewed with dialect information (see Part III below), leads me to agree with Filin (pp. 382-383) that possibly the second palatization never reached the far north of common Slavic and that through geographical extension this form is now standard for contemporary Russian.

A special note must be made of the modern imperative ljag! ∿ leč'. The proper Old East Slavic imperative was ljazi! c.f. Old Church Slavic lęzi! (Kiparsky 1967: 193). This verb is affected not only by dispalatalization (or absence of the second palatalization, as above) but also by truncation. Durnovo claims (p. 336) that the truncation must have occurred first. This claim is supported by evidence from Kiparsky (1967: 193) that the form ljaži'![3] is found in later humorous literature. This verb presents other problems as will be seen below. This concludes the historical treatment of the imperative but the information here presented may be kept in mind when considering later synchronic claims.

---

[3] Notice the appearance of the incorrect first palatalization in this form, c.f. Ukrainian, and Belorussian, Table III, in Part II of this chapter.

PART II: COMPARATIVE SLAVIC DATA ON THE IMPERATIVE

Having seen the changes that occurred between Old East Slavic and Modern Russian, it will be beneficial to examine briefly how the changes in Russian compare with changes in the other contemporary Slavic Literary languages. This type of information can be obtained chiefly by consulting various guides to the Slavic languages. The quality and quantity of the data varies considerably, especially when treating some of the lesser known Slavic languages, e.g. Macedonian and the Sorbian languages. The chief sources consulted here are the survey texts of Vaillant (1966) and de Bray (1969) as well as a very useful article by Lenček (1974)[4].

The first question is which persons remain from Late Common Slavic as marked in the imperative. The following table is from Lenček (1974: 176).

---

[4] Where possible, native speakers were consulted to check the correctness of the information.

TABLE I

Number	Singular			Plural			Dual		
Person	1	2	3	1	2	3	1	2	3
Language									
Russian		+		±	+		-	-	
Ukrainian		+		+	+		-	-	
Belorussian		+		+	+		-	-	
Polish		+		+	+		-	-	
Czech		+		+	+		-	-	
Slovak		+		+	+		-	-	
Upper Sorbian		+		+	+		+	+	
Lower Sorbian		+		+	+		+	+	
Slovene		+		+	+		+	+	
Serbo-Croatian		+		+	+		-	-	
Macedonian		+		-	+		-	-	
Bulgarian		+		-	+		-	-	
Old Church Slavic[5]		+		+	+		+	+	

It can be seen from the table that Russian is an unusual language in this regard. The ± designation signifies the fact that Russian has a syntactic first person plural imperative, but no separate morphological form. No other Slavic language exhibits this peculiarity. Those languages which in general have preserved the dual have corresponding dual imperatives. No language which has lost the dual in all other forms has retained it only in the Imperative.

---

[5] Old Church Slavic is not a Modern literary language but is used here strictly for comparative purposes.

The next points which are worthwhile considering are the presence or absence of truncation in the imperative desinence /i/, and the presence or absence of a two-theme vowel /i/ or /ě/ system as in Late Common Slavic. The following table is based on that by Lenček (p. 177) but with considerable simplification and supplementary information from Vaillant and De Bray.

TABLE II

Language	Retention of Two-Theme System	Presence of Desinence Truncation
Russian	-	+
Ukrainian	+	+
Belorussian	-	+
Polish	-	+
Czech	+	+
Slovak	-	+
Upper Sorbian	-	+
Lower Sorbian	-	+
Slovene	-	-
Serbo-Croatian	-	-
Macedonian	+	-
Bulgarian	+	-
Old Church Slavic	+	-

Russian is quite regular in its treatment of these phenomena and presents the researcher with no specific problems.

Most central to our discussion is the fate of those verbs in Late Common Slavic which exhibited various consonantal alternations in the imperative[6]. In question is the retention or loss of the palatalization. In addition the fate of the results of the various historic palatalizations will vary with the individual language. The original second palatalization may be preserved or its reflexes may be changed to those of the first palatalization, e.g. *peci* may be *peči*. The following table was constructed by using information from the three previously cited sources:

TABLE III

Language	Alternation Preserved	Second Palatalization Preserved	First Palatalization Innovated
Russian	- *peki*		
Ukrainian	+	-	+ *peči!*
Belorussian	+	-	+ *pjačy!*
Polish	+	-	+ *piecč!*
Czech	+	+ *pec!*	-
Slovak	+	-	+ *peč!*
Upper Sorbian	+	-	+ *pječ!*
Lower Sorbian	+	+ *pjać!*	-
Slovene	+	+ *péci!*	-
Serbo-Croatian	+	+ *peci!*	-
Macedonian	+	-	+ *peči!*
Bulgarian	+	+ *peci!*	-
Old Church Slavic	+	+ *peci!*	-

---

[6] Consonant mutations resulting from the jotation process are preserved in all the Slavic languages and thus pose no problem here, e.g. /pisa/ ∿ /piš/.

It can easily be seen from the above table that the situation which obtains in Russian today is most unusual for the Slavic languages. The presence of the velar is a unique feature of Russian and one which is quite difficult to explain.

One final comparative statistic is noteworthy. Stankiewicz (1966) points out that the East and South Slavic languages which utilize accentual variation in the nominal and verbal systems tend to decrease the use of consonant alternations in the stem. The West Slavic languages have fixed stress and a large use of consonant alternations. He further points out that velar alternations are most common in nominal stems and dental alternations in verbal stems (pp. 510-513).

PART III: DIALECTOLOGICAL NOTES ON THE IMPERATIVE

Another source of information which can be of considerable use to the linguist is dialectological material. Although basically outside the scope of this work, a few brief comments concerning the imperative Russian dialects will prove useful.

A very thorough analysis of the problem of the absence of the (K → Č) alternation in certain verbs is contributed by the dialectologist Orlova (1970: 96-106), who discusses voluminous data and classifies it very precisely. Unfortunately, the imperative is not the main focus of her attention but the pattern discussed for each verb does apply.

For verbs of the type such as peč' four possible classes are observed. They are:

(1) /peku/ ∿ /pečeš/ ∿ /pekut/

This is the situation found in the standard language, with (K → Č) alternation in various verbal forms. This scheme is found in the central area around Moscow and extending to the north of the central area for some distance.

(2) /peku/ ∿ /pek'eš/ ∿ /pekut/

There exists a class of alternants whereby /k/ and /k'/ alternate within the paradigm. This situation is the predominant dialectical one, for it encompasses all of Southern Russia and extends through the west to some extremely north-western locations.

(3) /peku/ ∿ /pekoš/ ∿ /pekut/

In this group of dialects only /k/ occurs. Dialects in which this phenomenon is exhibited form a solid block to the east and north-east of Moscow.

(4) /peču/ ∿ /pečos/ ∿ /pečut/

Orlova considers this final group to be the most recent development. This group contains forms only in /č/, the velar being completely absent. This group forms no specific pattern but exists in small clusters dispersed throughout the entire Russian dialect area.

Most curious is the set of facts which Orlova presents concerning the verb leč' which has the imperative ljag! in the standard language. This verb fails to correspond to the pattern detailed above for peč'. Instead Orlova discerns the following pattern (pp. 102 ff.). The pattern of the literary standard with the expected /g/ to /ž/ alternation in the present tense, but with ljag! as the imperative, is found in the area to the north of the central Muscovite region itself. Forms exist which have a /g/ to /g'/ alternation, and as could be predicted from the above, this constitutes the north western group of dialects. To the east of Moscow and in the far north is found a third group in which hard /g/ appears in all forms. The unusual phenomenon is that the southern two-thirds of the area uses forms in which only /ž/ occurs in all places, including the imperative, for

/g/. This is obviously not the original situation, and Orlova explains this oddity on the basis of analogy to verbs like *rézat'*, *réžu* and *mázat'*, *mážu*. She claims that forms like *ljaž!* originated and spread in the Eighteenth Century.

There exists another study under the direction of Avanesov (1957) which concentrates on the infinitive form of verbs of the *peč'* type. It is interesting to note that all of the following variants are found in the central and eastern areas alone: /peč'/, /peči/, /pekči/, /pekti/, /petči/ and /pečt'i/ (pp. 901-905).

It is in the whole northern area that the velar is extensively found, while the palatal alternants are located overwhelmingly in the south. This adds further support to the point raised earlier concerning Filin's contention that the second palatalization very weakly or possibly never reached the north of the Old East Slavic territory.

Although not nearly as extensively studied, one last phenomenon of interest may be briefly mentioned. This concerns those verbs which exhibit a (T → Č) alternation as a result of jotation, i.e. *pisat'* versus *piši!*. There is evidence from the dialects, once again chiefly from north and east central regions, to illustrate a regularization of this unproductive class into the pattern of the productive class-like *čitaj!*. The following examples are to be found; *plákaj!* instead of *pláč'!*, and *skákaj!* instead of *skači'!* (Gorškova and Xmelevskaja p. 116), and *prjataj!* instead of *prjač'!* (Meščerskij p. 194). This illustrates a tendency towards regularization of unproductive classes. As with the historical and comparative evidence such information may be borne in mind when considering the various analyses to be presented.

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CHAPTER TWO

TRADITIONAL STUDIES ON THE RUSSIAN IMPERATIVE

The number of works in which the Russian imperative has been treated is so large that a complete survey of them would be impractical. A considerable number of these studies treat the imperative in a largely superficial manner. In this section, a brief survey of the history of research on the topic will be set out and some of the more significant works discussed in detail. The discussion is constructed primarily on a chronological basis. A variety of different theoretical approaches will be considered, though most of the works discussed in this chapter can be grouped under a general heading of structuralist or pre-structuralist.

Vinogradov (1972: 457-461) presents a very concise survey of Nineteenth Century contributions to the topic, which provides an adequate background summary. The term *povelitel'noe naklonenie* (imperative mood) appears in the earliest grammars of Russian, those of Lavrentij Zizanij (1596) and Meletij Smotrickij (1619). The usage at that time was rather poorly defined. In the early years of the last century, the categories of mood frequently took on philosophical connotations which had little relevance to linguistics, for example A. Davydov's work (1852).

A famous Russian grammarian of the early Nineteenth Century, N. I. Greč (1834) continued to recognize the various traditional categories of mood but opposed the then current associations of verb forms to supposedly corresponding nominal phenomena. Vinogradov (p. 459) cites as an example the notion that the indicative mood was equivalent to the nominative case and that the other moods correspond in some way to the oblique cases.

In the second half of the Nineteenth Century several new ideas were discussed and old concepts clarified. Aksakov was the first to distinguish between the true morphological imperative, e.g., čitaj! and various syntactic constructions with imperative meaning, e.g., pust'igrajut!. Unfortunately Aksakov still saw a connection with the nominal system which is today not considered valid, for example Jakobson (1932: 10 footnote 4) quotes Aksakov as saying, "der Imperativ ist ein Ausruf; er entspricht dem Vokativ."

Nekrasov (1865) called attention to the fact that Russian has a morphological imperative only in the second person singular and plural, and for the first person plural, the remaining persons being expressed by various syntactic modalities. This observation is quite correct. The conclusions which Nekrasov drew, however, are intriguing for he considered this lack of desinential forms to be evidence for the lack of an imperative mood in Russian.

Vinogradov discusses the contribution of A. A. Šaxmatov. In opposition to Nekrasov, this linguist revived the use of some terms for the various moods. He recognized seven moods[1].

Let us now leave Vinogradov's survey of the early contributions and consider the rapid expansion of literature on the topic beginning in the late Nineteenth Century.

In his *Iz zapisok po russkoj grammatike* (1874), A. Potebnja devoted considerable space to a discussion of mood. This work has undergone reprintings; for the purposes of this thesis, reference is made to the 1941 edition (pp. 167-197). At first reading, this article gives the impression of being a curious mixture of diachronic and synchronic linguistics with dialectological references. While it appears haphazardly organized, the article does contain some interesting and relevant information. Although probably not the first to notice the phenomenon, Potebnja calls linguists' attention to the absence of the (K → Č) palatalization in imperatives such as *peki*! Also, Potebnja provides a concise historical treatment concerning the origin of the /i/imperative desinence (pp. 172-173).

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[1] These seven moods are listed and summarized by Vinogradov (1972: 460) are: *povelitel'noe* (imperative), *iz"javitel'noe* (indicative), *želatel'noe* (optative), *uslovnoe* (conditional), *nedejstvitel'noe* (unreal), *predpoložitel'noe* (conjectural), *potencial'noe* (potential).

Two other works from this era deserve mention. The first is that of Peškovskij (1914). Although primarily important as a work on Russian syntax, one of its observations is relevant here. Peškovskij points out that the suffix /te/ is "maximally distinct" within the system of Russian affixes. Like Potebnja before him, he discusses the agglutinative nature of the suffix, citing as data its use in such widely disparate instances as: *pojdemte*, *budemte*, *nate*, *nute*, and *pošelte* *k* *čortu*. He clearly considers it a derivational rather than an inflectional desinence (pp. 128, 198).

A work often cited[2] as being one of the central studies on the Russian imperative is that of Karcevskij (1927). The two most important contributions made concerning the imperative are:

(a) Karcevskij claims that the sign of the imperative in the singular is the theme vowel, and not the desinences /i/ in the singular and /te/ in the plural. This appears to be the first mention of a theme vowel in the imperative, a concept which later linguists develop considerably. The agglutinative nature of the /te/ suffix is not mentioned, this suffix being characterized simply as a plurality-politeness desinence.

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[2] Lenček (1974: 169), Leška (1968: 41), Jakobson (1932: 12), etc. all mention this article in particular.

(b) Karcevskij provides a systematic classification of verbs into productive and unproductive types. A list of 399 verbs is presented. These verbs represent processes no longer active in the modern language or that are irregular in some other way. Although not specifically organized or developed to illustrate the imperative, a survey is easily made which points out the anomalous forms. For example, approximately seventy verbs exhibit a consonant alternation between the imperative and infinitive stems, e.g., *pisát'* ∿ *piší*! Of this group an estimated dozen belong to the onomatopoeic subgroup, e.g., *bormotát'* ∿ *bormočí*! Sixteen verbs are listed in which one would expect the velar ending to alternate, but in these the expected palatal is absent, e.g., *pekí*![3]

In his *Zur Struktur des Russischen Verbums* (1932), Jakobson establishes the basis for future work on the Russian verb.

Jakobson states that the role of the imperative in the entire verbal system of Russian is not strictly a syntactic but also a morphological and phonological one; "Der Imperativ zeichnet sich innerhalb des russischen Verbalsystems deutlich nicht nur syntaktisch, sondern auch morphologisch und sogar phonologisch aus." (p. 10).

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[3] For a more complete enumeration of such verbs, see Appendices II and III (pp. 111-114).

Jakobson then discusses some of the most noteworthy features of the imperative, which are:

(1) If the stem ends in an alternating consonant, the form of the imperative will be the same as the stem of the second person singular, except for the velars /k,g,x/ whose palatal counterparts /č,ž,š/ do not appear.

(2) If the present stem ends in /j/, which is non-vocalic in Russian, then an inserted vowel will appear in the imperative, e.g., *šit'* ∿ *šju* ∿ *šej!*

(3) The imperative desinence /i/ will not be reduced to ø[4] if the imperative stem ends in a consonant group, e.g., *sočni!*, if the desinence bears the stress, e.g., *kolotí!* or if the imperative is prefixed, e.g., *výgorodi!*. An exception is the unproductive class whose stem ends in /j/, e.g., *stoj!*, *poj!* (p. 11).

Jakobson was operating under a two stem system at this time. Such a system was standard for describing Slavic verbs until he introduced the one-stem solution in 1948 (see below). Following the earlier system every Slavic verb was considered to have two stems, an Infinitive stem and a Present tense stem, e.g., /pisa/vs./piš/, /čita/vs./čitaj/. No attempt was made to derive or interrelate one stem with the other.

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[4] The preceeding palatalization of the consonant is retained, e.g., *gotóv'!*

Following the above comments, Jakobson concentrates on the syntax of the imperative. He noted the fact that three concepts are expressed in the imperative: person, number, and politeness. He presents the various suffixes which may be added to the imperative. By using all permissable suffixes, he clearly illustrates the agglutinative nature of the form. He proposed the following five suffixes (translated and summarized from p. 12):

ø - the sign of the imperative
ĭm,im,om - the person marker[5]
t'i - the number marker
s - the voice marker
ka - the intimacy marker

Combining all these suffixes, he gives as an example:

"dvinemtes'ka"

While the agglutinative nature of the imperative is unquestionably demonstrated, one small deficiency should be pointed out. There exist data from many sources, (e.g. Potebnja (1941: 185), Karcevskij (1927: 140), Vinogradov (1947: 594-595), Ružička (1966: 11)), to the effect that /te/ is more than a simple plurality marker. One should bear in mind that politeness, as well as inclusivity relationships are both involved with this desinence and that consequently, the desinence system of the imperative as outlined by Jakobson (above) is not so concisely classifiable as it would, at first, appear.

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[5] The exact significance of the various symbols used is not explained by Jakobson.

In this article is the initial discussion of a topic to which Jakobson returns in later articles, e.g., (1948:49), etc. When the vowel ending is elided a combination of imperative desinence plus reflexive particle behaves differently from a combination of infinitive form plus reflexive particle. This is most critical when dental consonants are involved because forms closely resembling minimal pairs may be found. The imperative zabud'sja! is phonetically [zabut'sə] while the infinitive zabyt'sja is phonetically [zabytcə]. The most plausible explanation for these various facts is that the agglutinative nature of the imperative in some way (probably by means of a boundary[6]) prohibits the phonological process involved from acting in a like manner in two analogous environments.

A turning point in the structuralist study of the Russian verb is Roman Jakobson's "The Russian Conjugation" (1948). Since this study underlies future generative linguistic treatments as well as being the model for much of the future non-generativist literature on the topic, it is beneficial to examine this contribution in some detail.

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[6] For a definition of "boundaries" in traditional phonology, see Trager and Bloch (1941: 223 ff). In generative phonology one should consult Chomsky and Halle (1968: 364-372).

The core of the argument is the contention that the previous two-stem analysis of the Russian verb is inadequate. He proposed that every verb has one basic stem. For those verbs which have more than one surface stem, Jakobson proposes that it is possible to derive these stem shapes from the basic stem by a set of rules. In his terminology the basic stem is called the "full stem" and the derived stem(s) are called the "truncated stem(s)." This concept is to find fuller development in generative phonology as the underlying representation (see below). The phonemes which compose the full stems are determined in the accepted structuralist manner, i.e., "that alternant phoneme is chosen which appears in a position where the other alternant too would be admissible". (1948: 156).

Jakobson then presents a very exact classification of full stems, but with some rather obscure terminology. Stems may be "open" (ending in a vowel) or "closed" (ending in a consonant or semi-vowel /j/). The closed full stems are further subcategorized into "narrowly" closed full stems and "broadly" closed full stems. The former end in a resonant which is lost before a consonantal desinence, while the latter end in an obstruent, which, in most instances, are retained throughout the paradigm, though often only in a modified form. (Summarized from pp. 157, 159).

Turning specifically toward the imperative (section 2.122, pp. 158-159), Jakobson considers the desinence to be either /∅/ or /i/, with the latter occuring after two soft consonants or "after stems not having irremovable accent". This apparently means, after those stems which have movable accent, e.g., /kríkn'i/, /jézd'i/, /síd'i/. The imperative plural desinence is /t'i/. An entire series of rules, presented in a rather difficult prose, contain the proper derivation of all phonological forms of the verb. Since no symbolic formalisms are used in the original they will be avoided here. This lack of a concise notation hinders the clarity of the rules and also hides a number of redundancies.

Those rules which most directly affect the imperative are those for consonant palatalization and mutation of the stem consonants. All of the following rules are summarized from section 2.4 of the article:

(1) "Open full stems may end in any one of the five vowels, /i/, /e/, /a/, /o/, /u/ and they are dropped before vocalic desinences." (p. 160).

(2) The concept of "substitutive softening" is utilized. According to Jakobson's definition (p. 161) it corresponds to that definition of transitive softening used in this thesis[7].

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[7] See the "Explanatory Table for Notations and Conventions" pp. ix-x for a definition of transitive softening.

(3) "If the last consonant of a full-stem is soft, it preserves its softness through the entire paradigm." (p. 160).

(4) "If the last consonant in the full-stem is hard, it becomes soft in the following cases only: (A) A consonant followed by /a/ or /o/ in a polysyllabic stem is softened before any vocalic desinence; the softening being substitutive. (p. 161). (B) Otherwise, the consonant undergoes a 'bare' softening before any vocalic desinence which does not begin with /u/; the velars, however, undergo a 'bare' softening[8] only before imperative desinences and a 'substitutive' softening elsewhere." (p. 161).

Let us see how various types of imperatives are derived from these rules; examples:

(1) /govor'í/ + Imp. desinence /ϕ/ = /govor'í!/.
This is an open full stem with fixed stress.

(2) /čitáj/ + Imp. desinence /ϕ/ = /čitáj!/
This is a narrowly closed full stem with fixed stress.

(3) /p'ok/ + Imp. desinence /i/ = /p'oki!/
This is a broadly closed full stem with movable stress. Note that rule 5 (given above) applies and as this is an imperative desinence the substitutive softening does not manifest itself. A later rule which need not be quoted will change unstressed /o/ to /i/.

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[8] A non-palatalized consonant which becomes palatalized constitutes a 'bare' softening in Jakobson's terminology.

(4) /p'isa/ + Imp. desinence /i/ = /p'iší|/.

This is an open full stem with movable stress. Jakobson fails to mention that a certain ordering of these rules is impossible. The transitive softening rule (4) occurs because of the /a/. This /a/ disappears before a vocalic desinence as required by rule (1). Ordering of (1) before (4) is impossible. Simultaneous rule application or ordering (4) before (1) must be employed.

(5) /lga/ + Imp. desinence /i/ = /lg'í|/.

This is an example of an open full stem with movable stress. The last consonant is a velar and because this is an imperative desinence, only 'bare' softening will occur according to rule (5). As above, the same ordering possibilities apply, the ordering of (1) before (5) being impossible.

There are several points in this analysis which require further comment. They are:

(1) Sufficient supportive evidence appears to be lacking to uphold the claim that the two imperative desinences result from the presence of two soft consonants and/or movable stress in the full stem. It is unusual for Russian to require the choice of a desinence to be determined by stress considerations. This is a claim which is difficult to justify by any similar phenomena in the language.

(2) Rule (4) makes an additional claim which appears exceptional for Russian. It is claimed that transitive softening occurs before /a/ or /o/ in a poly-

syllabic stem before any vocalic desinence. As will be seen above, there is no diachronic evidence to support dentals changing to palatals before back vowels. The historical process points toward consonant mutations occurring before front vowels rather than back vowels. This change does not occur elsewhere in the contemporary language. This lack of supportive evidence makes the process appear dubious.

(3) There is a similar lack of credibility with rule (5). It is stated that of the three remaining vowels /i/, /e/, and /u/, the first two of these /i/ and /e/ will cause 'bare' softening to occur. The fronting of a consonant due to a succeeding front vowel is a natural process. It is maintained by Jakobson that velars do so only when imperative desinences are involved; otherwise transitive softening appears. Transitive softening occurs, then, in two peculiar environments: before /a/ and /o/ as given above in the full form, and also with velars in the non-imperative desinences. The questions one might ask are: Why is the imperative desinence different from other desinences? and, Why does transitive softening occur in such widely diverse and seemingly irreconcilable environments?

(4) One final point should be made. Jakobson fails to mention the possibility of an ordering dilemma which his rules could invoke, as discussed above.

All of these points will be raised again with regard to other linguists' analyses. For the present, let it suffice to say that in light of the points already made, it appears that many questions were not solved by Jakobson in his analysis of the Russian verbal system.

Another important, but more encompassing work, is that of Vinogradov (1947)[9]. This well-known scholar presents a very concise analysis. He gives six rules for the formation of the imperative. These rules often have served as the basis for pedagogical presentations in both Soviet and foreign grammars. The six rules translated and summarized are as follows (p. 465):

(1) If the stem of the verb in the present tense ends in /j/, then this constitutes the imperative, e.g., *čitaj!* , *stoj!* . If the stem ends in /í/ then the stem also serves as the imperative for those verbs, e.g., *kroí!* , but oj ∿ u verbs like *kryt'* have as their imperative *kroj!* .

(2) If the stressed stem of the present tense ends in two consonants (excluding those whose first element is /r/ and those in /st/) then the form of the imperative usually ends in /i/, e.g., *prodolži* . Otherwise it coincides with the verb stem if the stress does not fall on the ending, e.g., *postav'!* . An exception are those verbs which have the prefix /vy/. They retain stress on the prefix throughout, e.g., *výgrebi!* , *výstav'* . Verbs in /nu/ have the suffix /i/ but retain the /n/, e.g., *stukni!* .

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[9] All references are cited from the 1972 edition, which is more readily accessible.

(3) If the stem of the present tense ends in a consonant and if the stress in the present tense does not fall on the ending, then the imperative corresponds to the pure stem[10]. If in some forms of the present tense the stress shifts to the ending and in the infinitive it falls on the final syllable, then the imperative ending is /i/, e.g., *pišú* - *pisát'* - *piší!* .

(4) The verbs *pit'* , *lit'* and three others have the irregular imperative *pej!* , *lej!* etc.

(5) Verbs which have the infix /-va-/ in the present tense but not in the infinitive retain the infix in the imperative, e.g., *davaj!* .

(6) Verbs which have a present tense stem ending in /k/ or /g/ have imperatives in /ki/ or /gi/ respectively, e.g., *peki!* . In addition there are several irregular verbs in the imperative; *eš!* , *poezžaj!* etc. Vinogradov claims that *ljag!* with the infinitive *leč'* is by analogy from *sjad'!* and *sest'* .

Several of his conclusions, especially those pertaining to stress, are very similar to Jakobson's. This treatment is cumbersome and perhaps somewhat unnecessarily complex, but it is pedagogically useful.

One other point made by Vinogradov is worth attention. Like Jakobson he notes the agglutinative nature of the imperative. He does consider the /te/ desinence in more depth (pp. 467 ff.). He notes that its function is that of both plurality and politeness. For the first person imperative this suffix is used to indicate the following correspondences: *pojdem!* with *my s toboj* and *pojdemte!* with *my s vami* . Vinogradov credits this last observation to Buslaev (1858). Other researchers such as Potebnja (1874) and Karcevskij (1927) have considered this point, as well.

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[10] Vinogradov gives no examples for this class of verbs.

Jakobson (1957) returned to the question of the imperative. Aside from repeating much of the material presented in Jakobson (1932) and (1948), one important new point is raised that evokes some interesting supportive evidence. The definition of the imperative desinences are changed. They are no longer referred to as endings but as a set of "enclitic particles" or "annexes", the latter term borrowed from Whorf (p. 145). In support of this claim, Jakobson notes:

(a) Consonant clusters which are inadmissable elsewhere in the language are permitted here, e.g.: [p,t], [f,b], [m,t]: [m,t] as in /poznakóm,-#-t,i/ *poznakómte* and /pojd,-ó-m-t,-i/ *pojdémte* (p. 145)[11].

(b) In addition, Jakobson observes, "In the indicative /v,il,-í-t,i/ *velíte* there usually figures the close variety of /i/ due to the subsequent palatalized consonant in the same word, while in the imperative /v,il,-í-t,i/ *velíte!*... we may observe a more open variant of /i/, as in the word group /pr,i+v,i-l-i t,ibe/ *privelí tebe!*." (p. 145).

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[11] Jakobson gives no examples for [p,t,], [f,t,] clusters. It is easy to provide some, e.g., [gotov'te], [sup'te], [palub'te]. The # signifies his imperative boundary.

(c) Finally, he notes that the form of the imperative annex is /ø/ (with predictable variants /i/, /í/, Jakobson, 1948: 158-159). This is the only place in the verbal system that /ø/ is the basic form of a desinence.

The grammarian Isačenko's contributions (1960) are important to this study for the following reasons:

(1) He has classified the Russian verb into a very exact taxonomy which allows other researchers easy access to the verb in terms of productivity and the relative size of each verb class. In the appendices to this thesis one will find excerpts from Isačenko's classifications (1960) as well as those of Karcevskij's and Lightner's. This, it is hoped, will facilitate the understanding of those classes of verbs which are most interesting from the standpoint of each analysis.

(2) Related to this classification is a major discussion of imperatives and the productivity of the verb class membership. Interestingly, it is notable that the five productive classes are handled by the simplest set of rules. All of the troublesome imperative forms belong to verbs that exhibit processes no longer active in the contemporary language.

(3) Forms such as *napiši!* ~ *napisat'* follow the general derivational rules - the form of the stem of the second person singular present tense plus /i/. That the imperative stem is then different from that of the infinitive is a consequence of the unproductivity of the stem alternation /s ~ š/ and not a consequence of the productive rules for imperative formation.

(4) The number of exceptional imperatives is rather small and constitute membership from unproductive classes. This includes verbs which have regular unproductive class features but are exceptional only in the imperative, e.g., *peč'* - *peki!* and *leč'* - *lgi!* .

(5) One additional piece of evidence deserves mention. Isačenko augments Jakobson's and others' conclusions concerning the agglutinativeness of the imperative with respect to a form previously overlooked. The agglutinative suffix /te/ can even be extended to foreign interjections, e.g., *mersi!* , *mersite!* (p. 483).

Of the many structuralist studies which exist, those presented above appear the most thorough and are representative of how the imperative is handled within the structuralist tradition.

CHAPTER THREE

GENERATIVE STUDIES ON THE RUSSIAN IMPERATIVE

The term "generative phonology", as it will be used in this thesis, refers to the linguistic approach originating in the late 1950's as a result of theoretical proposals put forward by Noam Chomsky and Morris Halle. The most complete compilation of the theory is to be found in their joint work The Sound Pattern of English (1968). For a concise discussion of the role of generative phonology within the larger overview of transformational-generative grammar, Botha (1971: 38-75) should be consulted. There will be no attempt in this work to judge the relative value of generative phonology as compared with other phonological theories, but only to evaluate the usefulness of generative phonology in describing and explaining the Russian imperative in a way consistent with the basic assumptions of the theory itself.

One of the first major generative contributions was Halle's (1959) The Sound Pattern of Russian. Thus, Russian was one of the first languages to be examined using this approach and is still one of the languages which receives special attention from generativists. Only two points in Halle's work refer to the imperative either explicitly or by inference. First, with regard to boundary assignment, a word boundary (%) is inserted before the /t,i/ plurality-politeness desinence of the imperative, e.g. {žg'i%t'i} (p. 49). In a footnote, Halle credits this observation to Jakobson (1948: 159). This boundary is necessary to block the application of Halle's Phonological Rule 6c (p. 67) which states, "Before plain, acute, non-compact (dental) consonants and before plain liquids, {*r} and non-compact (labial and dental) consonants are plain." The % boundary prohibits the function of this rule so that /za=b'ud, % sa/ remains unchanged and later, by the action of a general rule, becomes [zabut,sə]. If this rule were not blocked the imperative form would become *[zabucə]. In its final two segments, this is, in fact, identical to the phonetic shape of the infinitive (which does not have the boundary); *zabut'sja* [zabytcə] and not *[zabyt'sə]. As mentioned above this observations was first made by Jakobson (1932:12).

Although not critical in *The Sound Pattern of Russian*, the second point is of considerable interest when one takes into account later articles by Halle. In referring to Jakobson's "substitutive softening", he applies the term *perexodnoe smjagčenie* or "transitive softening" and states a fact not previously emphasized, namely, that this process occurs only in the verb conjugation, while nouns and other lexical categories are excluded. Further, he concludes, "The decision of whether or not this phonological process applies depends, therefore, materially on factors other than the feature composition of the particular segment." (p. 55). In addition, the rules which determine this process are to be included in the syntactic transformations. The relevance of this statement will be seen later when the failure of purely phonological solutions will be discussed.[1]

Following this publication, Morris Halle wrote two articles which deal in some depth with the Russian verb conjugation.

The first of these, Halle (1961), still forms the basis for the majority of successive studies and is of considerable importance, therefore, to this thesis.

Halle chose ten verbs which exhibit various alternations in their conjugated forms; among which are sidet', platit', pec', pisat', and lgat'. The point of the article was to account for transitive softening and palatalization as observed in these forms (p. 149). The constituent structure of the verbal forms is then established by means of syntactic rewrite rules based on the model of Chomsky (1957). Three of these rewrite rules are of considerable importance to the derivation of the imperative.

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[1] One will recall that an underlying assumption of this thesis is that rules for consonant alternations are phonologically conditioned. The author realizes that solutions based on morphological conditioning of the rules may be simpler but because no mention in the literature can be found, other than this remark by Halle, the topic will not be discussed further.

They are as follows:

(1) C → C + =

$$\text{in env. X}\_\_\left[\begin{array}{l}+\text{vocalic}\\-\text{consonantal}\end{array}\right] + \left[\text{Present}\right] + \left[\text{Imperative}\right]$$

where C is a velar consonant k, g, x and X contains no vowel if C is followed by a vowel. (This is Halle's rule 5, p. 150).

$$\text{(2) Present} \rightarrow \left\{\begin{array}{l}\text{i in env. X}\left\{\begin{array}{l}\mathrm{i}\\ \mathrm{e}\\ \mathrm{ja}\\ \check{\mathrm{c}}\mathrm{a}\\ \check{\mathrm{s}}\mathrm{a}\\ \check{\mathrm{z}}\mathrm{a}\\ \check{\mathrm{s}}\check{\mathrm{c}}\mathrm{a}\end{array}\right\} + \underline{\hspace{3cm}}\\ \\ \mathrm{o}\end{array}\right\}$$

(This is Halle's rule 6, p. 150).

(3) Imperative → i. (Halle's rule 9, p. 151).

These plus the earlier rewrite rules produce the following constituent structures for the sample verbs (pp. 151-152); (only particularly relevant examples are reproduced here):

(((sidé + i) +i) +#) , (((plat,i + i) +i) + #)

(((p,isá + o) +i) +#) , (((pláka + o) +i) +#)

(((p,ok + = +ó) +i) +#), (((lgá + = +o) +i) +#),

where the constituents represented are:

(((Basic Verbal Stem + Present Tense) + Imperative) + Verbal form boundary)[2]

Given this constituent structure, Halle then applies six rules in a cyclical manner[3] beginning with the innermost parentheses. The most important rule is as follows (p. 152):

C1. Transitive Softening takes place in the environment

$$X < \begin{matrix}+\text{vocalic}\\ -\text{consonantal}\end{matrix} > \_\_\_ <+> \begin{bmatrix}+\text{vocalic}\\ -\text{consonantal}\\ -\text{flat}\end{bmatrix} + \begin{bmatrix}+\text{vocalic}\\ -\text{consonantal}\\ -\text{flat}\end{bmatrix}$$

where at least one of the entities enclosed in < > must be present.

Rewritten in a more readable notation this rule reads: $C \rightarrow TS/\_\_\_\_ + a + o$.[4]

Other rules include stress assignment, vowel elision, and the truncation of the imperative /i/ in the environment X_____#. A sample derivation is that of the imperative of peč', peki! (p. 154):

(((p,ok + = + ó) +i) +#)

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[2] The innermost parentheses embraces the EVS, the "extended verbal stem" (p. 150). The plural morpheme /t,i/ would be inserted between the imperative morpheme and the verbal form boundary according to rewrite rule 2 (p. 150), but this desinence is omitted from all his examples.

[3] For a discussion of the transformational-generative cycle, see Chomsky and Halle (1968: 15-42).

[4] The designation o stands for any vowel which is +flat. In Russian these vowels are /o/ and /u/.

C1 (not applicable)

C2 (not applicable)

C3 (not applicable)

C4 (not applicable)

C5 (not applicable)

C6 p,ok + = +ó +i[5]

C1 (not applicable)

C2 p,ok + = +ó +i

C3 p,ok + = +í

C4 (not applicable)

C5 p,ok + = +í

C6 p,ok + = +í +∅

No rules apply in the third cycle.

Because transitive softening is blocked by the = boundary, two further rules are required in the post cycle to allow transitive softening and palatalization to occur. These rules are as follows (from p. 154, using the revised notation):

P1. $K \rightarrow \check{C} / \_\_\_ X$, where $X \neq + = +Y$

P2. $K \rightarrow K' / \_\_\_\_ (\{+ \overset{+}{=} +\})\ \breve{V}$[6]

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[5] Halle omits bracketing from these derivations. Such a procedure is not standard when employing the transformational cycle.

[6] $(\{+ \overset{+}{=} +\})$ means that either boundary occurring before V (any front vowel) will not block the application of this rule.

These rules affect any velars that remain unchanged and whose mutation is not specifically blocked by the = boundary.

This represents a summary of the process of the derivation of the imperative according to Halle's (1961) analysis. Upon close examination several observations can be made concerning this analysis. The chief ones are the following:

(1) Halle's use of rewrite rules in this article to introduce specific morphemes is no longer allowed within transformational syntax since the theoretical renovations appearing in Chomsky (1965). In the revised model this kind of information is introduced either in the lexicon or in the transformational rules.

(2) The introduction of the verbal form boundary by means of rewrite rules is likewise obsolete. In Chomsky and Halle (1968: 364-372) boundary insertion is accomplished by either general convention or readjustment rules, which can modify the syntactic output.

The following further criticisms of Halle's use of boundaries in this article might be made on grounds other than mere theoretical obsolescence.

(a) The boundary = which is used to block the application of the transitive softening rule appears quite similar to the unmotivated junctures used by various structuralists in similar situations (Harris 1951: 79-89). Since this boundary does not correspond to any of the boundaries for Russian proposed by Halle (1959: 41, 49-50) and since a survey of other later works on Russian by this author produce no reoccurrences of its use, one must conclude that this boundary is an ad hoc diacritic introduced for the purposes of this article only.

(b) The internal constituent structure of the imperative as proposed in this article does not seem to be adequately justified. No syntactic or phonological motivation is put forward to explain the appearance of the present tense theme marker within the imperative. No mention [illegible] made concerning the appearance of such a marker in the surface representation nor of any syntactic explanation as to the ability of the morphological imperative to express tense. As will be seen later, Lightner (1972) is forced to admit there is no motivation for the constituent structure.

(c) The environment for the rule C → TS/___a + o is rather questionable. No other rule in Russian applies in this environment.

(d) Despite his use of a transformational cycle, Halle still requires two post cyclical rules to account for instances in which consonant alternations do occur. These rules appear to accomplish what the cycle could not. This raises another unanswered question.

(e) The fact that the politeness-plurality marker is omitted from the derivation is important not only because it makes the derivation incomplete but it raises questions as to the manageability of the cycle if it were included.

All of these points become less inexplicable when they are viewed consistent with the whole derivation.

(1) The unusual boundary insertion rule implants the = boundary in just the proper place to block the functioning of the transitive softening rule in the cycle. This prevents /p,oki/ and /lgi/ from become */p,oči/ and */lži/ respectively. In addition, this boundary also conveniently blocks the application of the post cyclical (K → Č) rule.

(2) The reason for the insertion of the present tense vowel into the imperative derivation becomes clear when one considers that it is the o present tense theme which makes the a + o environment workable.

This is necessary to account for transitive softening, without which Halle would not be able to get the desired /piš/ from PISA, for example.

(3) The present tense theme vowel and the verbal boundary provide the appropriate number of place holders for the proper

functioning of the cycle. It will be remembered that the former is questionably motivated, and that the latter is obsolete.

It is evident then that the definitive solution for the Russian conjugation within a generative framework was not achieved by Halle. Several other important contributions to this topic have been made by various other linguists. Before turning to a discussion of them, a summary of the problems involved will provide easily accessible reference points to aid in clarifying the discussion which will immediately follow. The main questions which have arisen in connection with previous attempts to describe the Russian imperative are as follows:

(1) Can a better motivated constituent structure be derived for the Russian imperative which is more in accord with the Chomsky (1965) model, which will more properly represent the underlying realities of the Russian imperative? Such a derivation should eliminate from the constituent structure ad hoc boundaries, and unrealistic theme vowel constituents.

(2) Is it possible to explain the absence of the (K → Č) alternation in the imperative form of velar stems without resorting to ad hoc devices?

(3) Is it possible to account for transitive softening involved in the imperatives of stems like /pisa/ without resorting to Halle's device of the a+o environment?

(4) Is the traditional Jakobsonian one-stem analysis still sufficient to explain all of the above phenomena in a natural way?

(5) Can the phonology of the imperative be described properly without invoking the transformational cycle?[7]

In the light of these questions, further discussion will concentrate on how other researchers solve or attempt to solve these problems.

Halle (1963) provides an updated and more polished version of his earlier analysis. It is basically the same as the article just summarized, but with three important qualifications.

(1) The constituent structure is expanded. The stem final vowel (usually /a/), which takes part in the transitive softening rule, is now separated from the verbal root and named as a "verb suffix", the new constituent structure now being (p. 117):

(((pis + a + o) +i) +#)[8]

Again the /t,i/ plural-politeness desinence is omitted but presumably it would be inserted as discussed in footnote 2 (p. 42).

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[7] Considerations of stress assignment have been deleted. The topic is too large and controversial for our purposes. We are not suggesting that the cycle could not be used for other purposes, such as stress, but only that it is irrelevant in accounting for consonant alternations. For a solution to replace the cycle in the analysis of the present tense see Holden (1974).

[8] (((root + verb suffix + present tense) + imperative) + boundary) is the new constituent scheme.

The above change prompts Halle to discuss a new difficulty which his analysis raises, namely, that verbs of the stojat' type must now not only lose their present tense theme vowel in the imperative, but their verbal suffix as well. One could conclude that imperatives like stoj! are no longer verbs but pure roots.[9]

(2) Halle (p. 119) presents a more clear prose statement of the transitive softening rule. Translated, this is as follows: "Transitive softening of consonants occurs before unrounded vowels which are followed by rounded vowels""

(3) Finally, the two post-cyclical rules are now collapsed into a new rule (p. 124 rule F), which translates as follows: "Non-transitive softening of consonants and the change of velars to palatals is accomplished

(a) before a morpheme consisting of the vowel /o/ which is followed by a morpheme beginning with a consonant,

(b) before a morpheme beginning with a non-low, front vowel, that is, before /e/ and /i/."

Halle is forced in a footnote (number 10 p. 124) to explain that this rule does not act universally in the phonology of Russian, and he is compelled to mark with a special diacritic # those forms which undergo neither this rule nor transitive softening.

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[9] See Halle's discussion (p. 117 footnote 5).

These changes help clarify some problems in the original article but in no way render the analysis more acceptable regarding the criticisms pointed out above.

The next important contribution is that of Lightner (1965/1967)[10]. He begins by directing the reader's attention to the difference between Jakobson's and Halle's analyses of the Russian conjugation. He directs his attention mainly to the following features (p. 37):

(1) only Halle's analysis takes into consideration syntactic constituent structure,

(2) only the rules in Halle's presentation are ordered,[11] and

(3) the generative account (Halle's) recognizes no phonemic level.[12]

Further, Lightner points out what he describes as "trends" in the study of the Russian conjugation, which he claims involve: "(1) the rising tendency to propose more and more abstract solutions, and (2) the growing realization that syntactic structure must be considered in phonological description." (p. 43).

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[10] The double citation indicates that the work appeared twice, originally in Russian. Citations from the 1967 English version are used in this thesis.

[11] This observation may not be completely accurate. We have already pointed out (p. 31) that Jakobson's rules may not be applied in a particular order and that specific problems may be involved here.

[12] The absence of a phonemic level is one of the chief tenets of generative theory. For a discussion concerning this claim see Chomsky (1964: 90-103).

It is most interesting to observe the importance which Lightner places on the role of syntax in the problem at hand; indeed, he even goes so far as to state that, "Halle's structure which depends crucially on syntactic structure..." (p. 43). Evidently realizing that the constituent structure proposed by Halle was not sufficiently explained and was questionably motivated, Lightner (p. 39) cites two sources as offering confirmation of Halle's syntax. They are: (1) Lightner (1966) and (2) Edward S. Klima's "Verb Phrase Structure in Russian" which was to appear in the Quarterly Progress Reports of the MIT Research Laboratory in Electronics. These papers will be discussed more fully in Chapter IV, Part I of this thesis.

After presenting a detailed summary of Halle's system, Lightner proposes his own additions, which may be summarized in the following three points:

(1) In a careful step by step procedure Lightner changes the transitive softening rule's environment from ___a + o to ___j + o. This may seem unusual at first, but it is accomplished in this manner. First, /j/ is inserted between the vowel marked [-round] = (/a/) and the one marked [+round] = (/o/). As originally put forward in the presentation the /a/ drops and the /j/ triggers transitive softening, after which the /j/ itself is eliminated. Lightner credits a former colleague S. Y. Kuroda (p. 47 footnote 21) with pointing

out that this entire process could be simplified by changing /a/ to /j/ before /o/. This would eliminate the two separate vowel dropping rules. For the purposes of this thesis, this revised form of the transitive softening rule will be referred to as the "Kuroda modification". Such a change does offer a more reasonable process to trigger transitive softening (namely, via assimilation to jod), but there still appears to be only slight evidence (Lightner himself gives none) for the postulation of a /j/ verbal stem in Russian following consonantal roots. It is most important to realize that the achievement of this more natural environment is attained by a rule which is itself unnatural. The results of this method are self-defeating. In addition, this process appears to be a recreation of the historical "jotation" which produced the alternation. No surface evidence for a synchronic velar and dental jotation in Russian can be found.

(2) One of Halle's rules not previously considered so important in this study is Cyclical Rule 3 (1961: 152) which deletes a vowel before another vowel across a morpheme boundary. Lightner modifies this rule by removing the (+) boundary and simply having any two vowels collapsing to one. He is quick to point out (p. 44, footnote 17) that this will require the addition of a boundary in such words as pauk where two vowels do occur in the surface representation. This change is of importance not because it greatly effects the imperative

derivation itself, but rather shows the nonchalance with which boundaries have been inserted into base forms to satisfy peculiarities of phonological rules without any consideration of independent syntactic motivation. This is particularly noteworthy in the context of Lightner's own discussion of the importance of syntax to phonological analysis!

(3) Lightner was able to significantly simplify the environment for the (C → TS) rule. He accomplished this by treating an O following a soft consonant as an underlying lax E. He was then able to utilize the (C → TS) rule to produce palatals in a host of forms. The simplification in the rule environment is beneficial, but it is not desirable because no evidence is offered to support the existence of such an E. Moreover, this step also complicates the underlying vowel system which must now contain both lax and tense mid-front vowels. In addition, this involves the introduction of a new feature into the phonology.

A small but important additional contribution to the question of transitive softening is that of Kiparsky (1966). He begins by accepting the constituent structure of Halle (1963). Next, Kiparsky presents the rules so remodeled by Lightner (1967) and gives some derivations whuch Lightner did not give. These rules and a sample are as follows, (p. 190-191):

	((pis + o + e) + u)	((sid + e + i) +u)[13]
(A) $V \rightarrow j / \_\_\_ + v$	(pis + j + e)	(sid + e + i)
(B) $i, u \rightarrow [-\text{vocalic}] / \_\_\_ v$	(pis + j + e)	(sid + e + i)[14]
(C^1) $V \rightarrow \emptyset / \_\_\_ + v$	(pis + j + e)	(sid + i)
second cycle		
(A)	(pis + j + e + u)	(sid + j + u)
(B)	(pis + j + e + u)	(sid + j + u)
(C)	(pis + j + u)	(sid + j + u)

Having done this, a further change in the rules is proposed by which rule (C^1) is replaced by rule (C): $V \rightarrow \emptyset / + \_\_\_ + [-\text{consonantal}]$ (p. 191), thereby eliding vowels before glides as well as other vowels. This derivation may be accomplished without the cycle (p. 192):

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[13] Unfortunately, Kiparsky gives no imperative derivations, so present tense derivations must be used here.

[14] Some of the segments in rule (B) pertain to forms not under consideration in this thesis.

	pis + o + e + u	sid + e + i + u
A	pis + j + e + u	sid + e + j + u
B	pis + j + e + u	sid + e + j + u
C	pis + j + u	sid + j + u

Several interesting observations may be gained from examining these derivations and the claims which Kiparsky makes concerning them.

(1) Why does O change to J before E in the derivation of /pišu/ but E does not change to J before I, while I changes to J before the U in /sižu/? This appears most puzzling, until one rereads Lightner and notices that in the Kuroda modification, the vowel in the environment of the rule must be marked [+round] in which case the change of O to J does not take place in /pišu/. The failure to incorporate this detail into the above rules leaves Kiparsky with no meaningful way to specify which vowels undergo the rules and which vowels do not.

(2) Kiparsky states, "The proposed generalization of the truncation rule, *if correct* (emphasis mine CJD) strengthens the case for Halle's rule for transitive softening by making its validity immune to the outcome of still unsolved problems concerning the correct assignment of derived constituent structure in morphology." (pp. 191-192).

Several points seem objectionable in this statement. (a) As seen above, Kiparsky sets up the form ((pis + o + e) +u)) which is in contradiction to this initial statement in which he accepts as valid Halle's constituent structure (p. 190), for this would give ((pisa + o + e) u). Obviously Kiparsky has made a de facto judgement on constituent structure. If PIS is proposed as the basic verbal stem, from where then would the /a/ in /pisat'/ originate?

These considerations aside, the acceptance of a series of placeholders, such as the thematic vowels in these examples precludes statements to the effect that syntactic considerations can be eliminated from the discussion.
(b) The above modifications are intended to increase the validity of Halle's transitive softening rule. Yet, all of the above is based on Lightner (the Kuroda modification included). How the above changes further justifies Halle's (C → TS/___a + o) rule for transitive softening is most unclear.
(c) This derivation does not eliminate the cycle. As Kiparsky states, "the correct phonetic forms are obtained if rules (A-C) apply post-cyclically to a string whose internal constituent structure has been erased." (p. 191). Removing this series of rules and the transtivie softening rule from the cycle does not make them any less dependent on the output of the cycle, an output which, one must remember, is determined by an input based on specific constituent structure.

Two points that a careful examination of this article makes quite clear are: (1) Considerations of constituent structure are probably unavoidable despite attempts to eliminate them. (2) Careful attention must be paid to all the rules, their environments and consequences, because the derivations are interdependent, and individual parts cannot be removed or modified without disturbing the entire scheme.

Chomsky and Halle (1968) made certain important contributions to the questions collateral to transitive softening. Operating in a purely chronological way, these points should be discussed now but as they are much more relevant to our further discussion they have been relegated to Chapter IV, Parts II and III.

The most comprehensive generative treatment of Russian phonology is that by Lightner (1972)[15]. It is beneficial to examine this study quite fully because it offers an opportunity to perceive the role of the problems of the imperative _in toto_.

This study differs from Lightner's previous articles in several appreciable ways:

(1) Unlike all previous articles, no palatals are postulated in underlying representations. All surface palatals must be derived in the phonological component.

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[15] Lightner does postpone some difficult questions to volume to II (to appear) but in general attempts to touch on all major phonological problems. Syntactic supporting evidence is minimal.

(2) Since more alternations must be explained Lightner's task is greatly complicated. The rules for certain alternations, e.g. velar to dental, must be so formulated as to be inapplicable in instances such as the imperative where they do not occur.

(3) Previous studies were limited to explaining alternations occurring only within a particular lexical class. Lightner has expanded his scope to include alternations which are found in all lexical categories. Since in this thesis our topic is limited to alternations of the first variety, evidence which Lightner uses to explain (K → Č) in nominalization for example, will be held to a minimum.

(4) Lightner proposes a considerably abstract system of vowels in his underlying representations. These vowels naturally will take part in several of the rules. Therefore, the vowels themselves are within the scope of this topic but their justification lies outside it. In this respect no attempt will be given to furnish explanations of the origin of specific underlying vowels.

As in previous articles, Lightner emphasizes the importance of the constituent structure. He states, "One major problem that arises in any cyclical analysis is to find motivation for word-internal constituent structure." (p. 98). In connection with the above use of the cycle he concludes, "With regard to segmental phenomena, most cyclical analyses have been shown to be incorrect and the proper corrections require non-cyclical rules." (p. 133). Despite the above statement no syntactic justification of the constituent structure is presented nor is there any justification for the use of the cycle. Although Lightner's treatment of the constituency is not specifically defined anywhere in the book, an accurate appraisal may be attained by examining the structure of a few critical verbs, e.g.

$$((p\acute{\bar{I}}s + \bar{a} + e)\ n + tu) \qquad ((pek + \acute{\emptyset}) + n + tu)^{16}$$

The above representations are basically the same as Halle (1963) where a verbal suffix and a present tense theme are used, both within the same brackets. The absence of a verbal suffix in the underlying representation for pekut is an example of what Lightner (p. 113) terms a consonant stem with a zero (ø) verb suffix. He proposes, unlike Halle, alternations within his suffixes. The failure of forms such as /sosat'/ 'to suck' to undergo transitive softening while /pisat'/ does, is explained in terms of the proposal that in /sosat'/, the root SOS has an alternating verbal suffix $\bar{A} \sim \emptyset$, whereas in PIS the suffix is always $\bar{A}$. Other verbs such as /bežat'/ (imperative /begi!/ are proposed to a verb suffix exhibiting the alternation $\bar{\bar{E}} \sim \emptyset$, pp. 113-114).

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[16] The N + TU is Lightner's in the underlying representation third person plural desinence. The same position in the constituent structure of imperative forms would be occupied by the imperative desinence, which Lightner proposes to be oi (p. 319).

A special problem is posed by the verb lgat' which Lightner represents as LUG + Á (p. 36) and which he considers to have a vocalic rather than a velar stem.[17] It does not have a ø verbal suffix, but rather the Á suffix. He demonstrates, however, that it behaves like the velar stems in the present tense, i.e. peč' (p. 178).

One of the most significant contributions made by Lightner is his tacit recognition that Halle's solution to the imperative is incorrect.

In classifying the alternations, Lightner gives separate sections for (K → Č) (pp. 139-145); (T → Č) (pp. 145-148); (ø → L) (pp. 158-159). This in effect dismembers the Jakobsonian process of transitive softening with which Halle agreed. This is proposed by Lightner not for simple convenience or ease of presentation but on the grounds that it is conceptually more correct. He supports this decision with the observation that Halle was forced to treat (K → Č) twice, once in his cycle as part of transitive softening and again in the post-cycle as a separate (K → Č) rule. The present author agrees with Lightner's tripartate division of transitive softening both on Lightner's own reasoning and also because (C → TS) rules fail to meet the required conditions of naturalness.

How is the (K → Č) rule presented in Lightner (1972)? In its initial form it is basically the same as Lightner (1965/1967):

$$K \rightarrow \check{C} / \underline{\quad\quad} \ddot{V}$$

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[17] In Lightner's terminology, "stem means ROOT + VERB SUFFIX". (p. 178 footnote 13).

The rule for jotation $(V \rightarrow j/\_\_\_ \begin{bmatrix}+\text{vocalic}\\-\text{high}\end{bmatrix})$ and similar rules are presented exactly as in his previous work. In Lightner (1972) two changes in the rules are proposed. Firstly, the environment of the (K → Č) rule is expanded to include positions before J (p. 139). This change will account for forms such as /plačet/ from plakat'. This change in the (K → Č) rule is motivated as being a natural generalization of the environment which is already specified as containing front vowels. Jod, a front glide, is a member of the same natural class as front vowels.

Secondly, a change is postulated (p. 284) whereby the alphabet feature [-HARD][18] is added to the environment of the (K → Č) rule. As this is introduced to explain certain velar ∿ palatal alternations in the nominal system it will be omitted from further discussion here.

After all these changes to the analysis, only three classes of exceptions remain, (1) imperatives such as /peki|/, /begi|/, /lgi|/ the discussion of which Lightner relegates to his forthcoming second volume (pp. 19, 145). (2) all forms of the two verbs /tkat'/ and /skat'/ which he concludes must be marked as purely exceptional (p. 144) and (3) velars occurring in nouns of recent foreign origin (p. 18).

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[18] Alphabet features and other means of noting exceptions will be discussed in Chapter IV, Part II.

Two other unusual morphological data add support to the exceptional nature of velars in Russian. They are:
(1) Only velar consonant stems form infinitives in /č/ resulting from an unusual K + TI combination.
(2) The present gerund cannot be formed with verbs whose stem ends in a velar; this implies the existence of a phonologically conditioned syntactic rule (pp. 190-191). This is a most unique situation for it demonstrates the unusual nature of the velars and provides an example of a rare phenomenon in syntax.

The (T → Č) rule corresponds in general to Lightner's previous proposal, but he rephrases it slightly (p. 148):

$$(T \rightarrow \check{C})\ \{t,d,s,z\} \rightarrow \{\check{c}\ \text{ǯ}\ \check{s}\ \check{z}\}/\underline{\quad}\,j$$

This rule will account for the alternation in such verbs as pisat', i.e. /pišil/.

A sample derivation from Lightner is given as follows:

UR:	$((p\bar{i}s + \bar{a} + e) + t)$[19]	$((pek + \acute{e}) + n + tu)$
cycle 1:	(pis + a + e)	(pek + é)
$\bar{V} \rightarrow j$:	(pis + j + e)	not applicable
$\bar{V} \rightarrow \emptyset$:	not applicable	not applicable

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[19] Present tense forms are derived because no imperative derivation is given. Unfamiliar symbolism include: UR = underlying representation (base form), C' = palatalized consonant, MONOPH = monophthongization $(V \rightarrow \emptyset/\underline{\quad}V)$. VN = vowel nasal insertion. For more information on these rules which are not critical to the derivation of the imperative, and one should consult Lightner (1972).

cycle 2: (pīs + j + e + t)
no change
post cycle: pīs + j + e + t

K → Č: not applicable
T → Č: pīš + j + e + t
C - C': p'īš' + j + e + t
j → ∅: p'īš' + e + t
MONOPH: not applicable
ǯ → ž: not applicable
š' → š: p'īš + e + t
e → o: p'ī + š + o + t
(pp. 104, 150)

(pek + é + n + tu)
no change
post cycle: pek + é + n + tu
(en → on): pek + o + n + tu
K → Č: not applicable
T → Č: not applicable
C → C': p'ek + o + n + tu
VN: p'ek + ū́ + n + tu
MONOPH: not applicable
G,N → ∅: p'ek + ū́ + tu
j → ∅: not applicable
DROP: p'ek + ū + t
š' → š: not applicable
e → o: p'ok + ū + t
(p. 188)

Lightner realizes that his proposal is not the final solution, and that more work needs to be done. He expresses dissatisfaction with the (T → Č) rule, for example. The possibility is discussed of changing the output of the rule to an intermediate series of non-strident palatals /ḱ,ǵ,x́,γ́/ and then subjecting them to the (K → Č) rule (p. 152). Since this process would provide the same initial output as a (K → Č) rule (by which K, G, X → /ḱ,ǵ,x́/) then the possibility of combining the two is discussed in a later section of the book. An even further combination, which would incorporate the palatalization of non-velars (C → C') into the initial (K → K') rule. This is supported on the grounds that (1) the environments are similar in which the change occurs, (2) the process involved is basically the same, production of palatals, (3) there appears to be support from distinctive features[20], and (4) other palatals (not crucial to the present study) require a double occurrence of the (K → K') rule which would not be necessary if a general rule was employed. (pp. 325-326).

In his concluding chapter, Lightner summarizes the difficulties to be encountered in attempting to treat this problem in a generative framework, chief of which he cites: phonological rule writing, a proper distinctive feature system, and the question of naturalness in generative grammar (pp. 316-317). One problem which Lightner omits that is apparent from his analysis, is the proper separation of inflectional as opposed to derivational morphology and the specific alternations characteristic of each. As will be discussed later in this thesis, this is a topic which is extremely relevant to contemporary generative theory.

The third and final major generative treatment of the Russian verb conjugation is that of Thelin (1973). He begins by reviewing Jakobson's and Halle's contributions and later, Lightner's (pp. 83-87 and 91-92 respectively). Thelin accepts the one-stem derivational system as well as Halle's basic constituent structure, with only one significant change in terminology. The following constituent structure is proposed (pp. 86-87):

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[20] For a discussion of distinctive features see Chapter IV, Part III.

(root) = (stem forming element) + (present theme) + (desinence).

To support this contention Thelin states,

"Arguing in favor of this solution are the facts that the choice of the present stem element, with some few exceptions, is predictable from the type of stem forming element..., and that the person endings in the generative process can be inserted only after the present-stem element is assigned." (p. 86)

From Lightner, he accepts the basic underlying representations. Although he does not overtly claim to eliminate all underlying palatals, it appears that, at least for verbs, he will not postulate any. Further, the concept of a J introduced to trigger the transitive softening (Thelin calls it "substitutive softening") rule is accepted but not in exact way that Lightner used it (p. 91).

Having presented the above list of what he finds to be correct in previous works, Thelin turns to those aspects of the Russian verbal system which he feels his predecessors did not sufficiently explain. These objectives are as follows: (1) Halle and Lightner make use of the device of cyclic rules. This is required by a specific ordering problem in the derivation. Halle makes the claim that palatalization must come

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before vowel deletion. The constituent structure which he proposes prohibits this from working unless the separate constituents are analyzed on an individual level, hence the cycle. Thelin finds the cycle to be an excessively powerful device and hence one to be avoided (p. 87).

(2) Thelin points out that when the above ordered rules are applied within the cycle to specific verbs, e.g. sidet' and tronut', the supposedly ordered rules now apply in an arbitrary manner. Thelin notes that such a circumstance is inconsistent with generative phonology, (p. 89).

(3) Thelin, in agreement with Lightner, preceives the error in Halle's system concerning the double occurrence of a (K → Č) rule (p. 88). Unlike Lightner, however, who separated the processes involved, Thelin attempts to solve the problem by reworking the environment for the application of the rule.

(4) Thelin quite properly remarks on the failure of Halle's analysis to explain the zero stem imperatives like pekil in a motivated way. He does not specifically mention the artificiality of the boundary employed (p. 88).

(5) Other peculiarities of the zero stem imperatives are enumerated. In addition to the imperative, derivational peculiarities occur in their present tense formation and the past passive participles (p. 88).

(6) Finally, in turning to Lightner's J-insertion rule (hereafter we will use Thelin's term - "j-epenthesis"),

Thelin for some unstated reason fails to incorporate it in its final form: The Kuroda modification is omitted. He prefers to discuss the rule in its original form where the J is inserted before the A + O, i.e. /pisj + a + o/, from which Lightner derives /š/. This solution is found to be unacceptable on the grounds that it is "phonetically unrealistic" and will no longer be feasible if incorporated with other changes that Thelin proposes (p. 92).

Having discussed these deficiences, Thelin then suggests the following modifications:

(1) Instead of the Jakobsonian present stem element O which Halle accepted, Thelin postulates an underlying E. This important change is supported by his contention that the O vowel would later become /i/ by means of a general vowel reduction rule. He maintains that two types of vowel reduction exist, one of the type (o → ə) and the other (e → i). Halle's assigning (o → i) to the former rule is found to be incorrect. Instead, Thelin finds the (e → i) rule more suitable for explaining this phenomenon. He cites evidence from the Russian vocalic ablaut system as further support (pp. 89-90).

(2) Thelin requires rule ordering but not the cycle. First, he proposes a vowel elision rule like Lightner does, which is followed by a noticeably modified transitive softening rule. The rule as now formulated states, that transitive softening always occurs before E but occurs before I only if no morpheme boundary intervenes. The zero suffix and its morpheme boundary are used to block the application of the transitive softening rule (pp. 90-91). This solution is supported by the fact that it treats the present tense in the same manner as the imperative with no use of an ad hoc boundary. The morpheme boundary is a necessary part of the constituent structure. Under this solution the old A + O environment is eliminated (p. 91). The following is a derivation of the imperative /peki!/ (p. 91):

" pek + 0 + e + i
C - C': p'ek' + 0 + e + i
vowel deletion: p'ek' + 0 + i → p'ek'i
vowel reduction: p'ik'i . "

Contrast this with the following derivation of the second person singular present tense of the same verb:

" pek + 0 + é + š
C → C': p'ek' + 0 + é + š
C → TS: p'eč + 0 + é + š
e → o: p'eč + 0 + ó + š → p'ečóš
vowel reduction: p'ičóš "

(3) As mentioned above, Thelin disagrees with Lightner as to the proper formulation of the j-epenthesis rule. Rather than inserting the J before the Λ + O, he inserts it between the vowels and then marks the stem forming element as [+ segment deletion] in instances like PIS + A but allows for its retention in such verbs as /čitaj!/. Verb categories such as the latter are accounted for without the unreasonable AJ or EJ stem formants being postulated (pp. 92-93). Aside from this change in the j-epenthesis rule itself, the postulation of an exception feature[21] in particular stem formants is an innovative and apparently well-motivated solution, since it treats these vowels as the exceptions which they appear to be. The following derivation of /pisa/ ∿ /piš/ illustrates these changes (p. 92):

" p'is + ((a))[22] + e

J-epenthesis: p'is + ((a)) + j + e

deletion of stem forming elements: p'is + j + e

C → C': p'is + j + e

vowel deletion: not applicable

C → TS: p'iš + j + e

consonant deletion: piš + e, etc. "

---

[21] For a discussion of exception features see Chapter IV, Part II.

[22] The double bracketing is Thelin's way of noting the exception feature [+ segment deletion]. The brackets have no syntactic meaning (p. 92).

(4) One further brief point should be mentioned. Thelin considers transitive softening to be a single process. He bases this judgement on data from verbs such as kolot', stlat' etc. These verbs have stems ending in a liquid. Note that in his derivation the (C → C') rule is ordered before the (C → TS) rule. He considers palatalization to be the first step towards transitive softening. Liquids cannot undergo transitive softening but are prepared for it by the (C → C') rule giving /l'/. The liquids would then be marked in some way to show that they are not effected by the (C → TS) rule (p. 93).

Unlike previous linguists, Thelin attempts to integrate his study into a larger grammar of Russian. Lightner only presented his analysis as it fits into the phonology as a whole, making no attempt to incorporate it into a feasible syntax. Although Thelin considerably modifies the more traditional transformational syntactic model of Chomsky (1965), it is nevertheless most beneficial to see the overall effect of his proposed scheme. Basically, he presents the following: Rules are divided into three groups according to the grammatical component in which they operate: There are lexical rules which operate in the lexicon, morphological rules which operate in the morphological component[23], and phonological rules which operate in the phonological component. The lexical rules which operate in the phonological component. The lexical rules are responsible for introducing the verbal stem forming element on to the roots as given by the lexicon. He characterizes this as being introduced by "idiosyncratic information in the form of rule features in the root morpheme" (p. 98). He postulates a total of twelve such suffixes (p. 98).

---

[23] The morphological component functionally appears to correspond to some transformational rules, the minor lexicon and the segmentalization rules in the (1965) Chomsky model.

The morphological rules actually comprise four different sets of rules:

(a) Present stem formation rules, which are responsible for assigning the present stem I or E to the appropriate verb, such assignment being completely predictable with only minor exceptions. The creation of the present tense stem and the imperative must be ordered before the creation of the infinitive-preterite stem. Thelin still maintains the existence of a present tense theme in the imperative. This is a conclusion for which he does not offer supportive evidence.

(b) Inflectional rules, which are responsible for determining the inflectional endings, person and number endings in the present tense, presumably, the /i/ imperative desinence.

(c) Accentual rules (the discussion of which is not required here), and

(d) Stem adjustment rules which determine processes such as the changing of exception features [+ segment deletion] to [- segment deletion] in those forms of the verb where the stem formant does not delete. Various consonant insertion processes and ablaut are also handled by these rules (pp. 98-100).

The phonological rules are those which operate purely within the sound system of the language with no syntactic or morphological preconditions. They include most of the rules seen above in the sample derivations of *pekił* and *pišił*, such as j-epenthesis, deletion of the stem forming element, non-substitutive palatalization, vowel deletion, substitutive palatalization etc. (pp. 100-101).

In conclusion, the major elements of Thelin's analysis are:

(1) Even though not presented within the standard framework, Thelin presents more syntactic justification for his constituent structure and rules than any of the other authors. Without considering the wider ramifications of such a grammar, his constituent structure appears for the most part to be internally consistent.

(2) Unlike Lightner, Thelin considers transitive softening to be a single process. This conclusion is based in part on evidence from liquids which undergo non-transitive softening, a process which he considers to be the first step in the transitive softening process. No mention of naturalness or distinctive features are made.

(3) Thelin accepts the existence of a present tense theme vowel in the constituent structure of the imperative. Although he proposes an innovative syntactic treatment to support his analysis in its larger aspects, no specific evidence is put

forward to support this particular assertion.

(4) This solution is a considerable simplification over either previous scheme, particularly in that it avoids the use of cyclic rules.

(5) Thelin's solution to the problem of pekil is new and insightful. It is true that the blocking of the (C → TS) rule by the zero suffix and its morpheme boundary provides a more adequate solution to the question because only forms are used which are independently justified in other parts of the derivation. No ad hoc boundaries are inserted. On the other hand, there is no apparent motivation for the conditions on the environment of the (C → TS) rule, namely, that the zero suffix and its boundary block the application of the rule only if an /i/ follows and not an /e/. Thelin gives neither any evidence concerning the occurrence of similar or related phenomena elsewhere in the grammar, nor any information on a difference between /e/ and /i/ which could help explain such an unusual claim. It appears therefore, that an unmotivated boundary has simply been replaced here by an unmotivated rule environment condition.

These three works represent the basic corpus of scholarship in terms of generative treatments of the Russian verb conjugation, at least in so far as the imperative is involved. With this as background, let us now examine in more depth the problem areas outlined above and evaluate some tentative solutions.

CHAPTER FOUR

SELECTED PROBLEMS IN THE STUDY OF THE IMPERATIVE

PART I: THE CONSTITUENT STRUCTURE

As demonstrated in the preceding chapter, many problems have not yet been solved concerning the phonology of the Russian conjugation in general, and the phonology of the imperative in particular. Several of these problems hinge on the validity of the proposed constituent structure of the imperative. It is a tenet of generative phonology that the syntax and the phonology operate as a cohesive grammar (Botha pp. 38ff.). Any of the constituents found in the phonology, including boundaries, must have viability relative to the functions of the syntactic component.

The constituent structure proposed by Halle (1961, 1963) and reaffirmed by Lightner (1965/67) is never expressly justified with syntactic evidence. As mentioned above, Lightner (1967: 39) states that justification of the constituent structure is found in two articles, viz. Klima (which was specified as forthcoming) and Lightner (1966). To the knowledge of this author Klima's article has never appeared and obviously requires no further comment. Lightner (1966) contains no supportive evidence of a syntactic nature. No phrase structure rules, transformations or any other syntactic evidence are to be found. The basic constituent structure of (root) + (verbal suffix) + (present tense marker) + (desinence) is put forward, as mentioned above, with no substantive supportive evidence. Lightner simply produces more phonological data to support his solutions. He again reiterates the necessity for a boundary in imperatives and cites the data concerning reflexives, e.g. [zabut'sə]. Indeed, one statement he makes, involves the claim that "the infinitive does not possess categories of time, person, number, etc." (translated from p. 74, footnote 26). If the constituent structure he proposes does not allow for tense in the infinitive (and here he is quite correct), how can he claim, as Halle before him, that the constituent structure of the imperative contains a present tense theme vowel? No syntactic proof of the existence of tense in this form is ever given.

It will be noted in Halle (1961, 1963) that the syntactic formalisms which appear are never supported by data from elsewhere in the syntax. The rewrite rules and bracketing are simply *ad hoc* unless supported by other evidence. In addition to being poorly validated internally, the theoretical approach used is now obsolete. Halle used the syntactic mechanisms available at that time, based principally on the model of Chomsky (1957). Since that time numerous advances have been made in syntax. One of the chief of these being the revisions put forward in Chomsky (1965). The three main differences between this model and the preceding one respective of the constituent structure for the imperative as proposed by Halle are:

(1) The earlier model used rewrite rules to build constituent structure. This device has now been superceded by phrase structure rules, which generate the basic sentence types in the grammar (Chomsky 1965: 84-90), and segmentalization rules (Postal 1970: 62-76) which apply to create the proper desinences after the transformations have applied (Chomsky 1965: 170-184).

(2) In the earlier model there was no "meaning preserving constraint" on transformations (Chomsky 1965: 132). Simple declarative sentences could be turned into imperatives, questions, or exclamations by the application of an appropriate transformation.

(3) The earlier model made no use of "syntactic features" in order to specify various relationships (Chomsky 1965: 75-83).

When one considers the lack of motivation given to the proposed syntactic constituent structure of the imperative as well as the now out-dated means of their original presentation, it becomes clear that any future discussion of the imperative will first require a restatement of the syntax involved. Four questions in particular are intimately bound to the issue of constituent structure:

(1) Is there any syntactic justification for the existence of the present tense theme vowel in the imperative constituent structure?

(2) The agglutinative nature of the imperative has been demonstrated in the phonology; does any syntactic evidence substantiate this observation?

(3) Jakobson (1948: 159) has demonstrated the need for a boundary after the imperative desinence in order to explain the absence of dental assimilation with palatals in reflexives. Is there any syntactic legitimacy to this claim?

(4) Does any syntactic motivation exist to support the claim made by Halle (1961: 150) that a special boundary is found after velars in imperatives, e.g. pekí!?

In the remainder of this section there will be presented a syntactic derivation of the Russian imperative. The model used will be that of Chomsky (1965), with the modifications proposed by Katz and Postal (1965) and Postal (1970) incorporated. This method was chosen because this author feels that the technique of base rules (Phrase Structure rules) provides a quite adequate treatment, especially for the limited corpus of data presented here. In addition, this model is widely accepted and firmly established. This is important for our purposes; without claiming that this is the definitive syntactic description of the Russian imperative, it is suggested that this derivation is a workable solution for a limited corpus of data which will provide a foundation for the discussion of the points set out above. Large scale metatheoretical issues are beyond the scope of this thesis. It should be emphasized that no complete generative syntax of Russian exists and even the number of published articles pertaining to the topic are quite limited. Let us then proceed to a brief syntactic derivation.

I. DATA

1. *sidí tam!*[1]

2. *pišíte dokládá býstro!*

3. *pekíte xleb!*

4. *ne lgi!*

5. *igráj!*

6. *govoríte po-anglíjski!*[2]

---

[1] The exclamation mark (!) is an orthographic device which represents the presence of imperative intonation.

[2] The above includes only forms of the morphological imperative, that is expressions with imperative meaning indicated by a desinential change on the verb and not involving any extra-verbal syntactic devices. This author is fully aware that many syntactic imperatives exist in Russian, e.g. *daj ja končul*, *pust' igrajut*, *davajte pojdem*, etc. Any complete syntax of Russian must surely account for such forms, but to attempt this task in this thesis would involve many theoretical syntactic issues and complexities beyond the scope of this paper. For a discussion of these various syntactic imperatives, see Švedova (1970: 580-582).

II. PHRASE STRUCTURE RULES

#S#

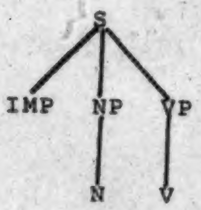
S → (IMP) (NEG) NP VP

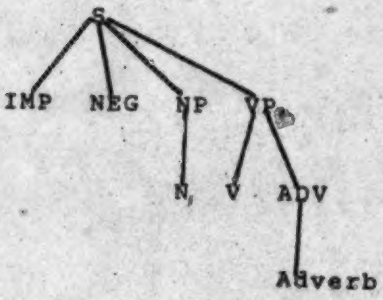
VP → V(NP) (ADV) (ADV) (ADV)

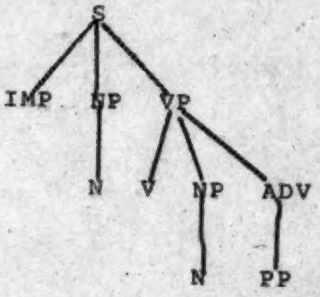
NP → N

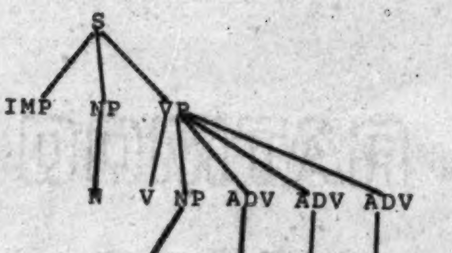
ADV → PP
Adverb

Sample trees:


S
IMP
NP
VP
N
V


S
IMP
NEG
NP
VP
N
V
ADV
Adverb


S
IMP
NP
VP
N
V
NP
ADV
N
PP


S
IMP
NP
VP
N
V
NP
ADV
ADV
ADV
N
Adverb
PP
Adverb

The above set of phrase structure rules and examples needs further clarification on several points:

(1) The (NEG) is inserted between the IMP and the noun phrase in order to avoid the necessity of specifying it in numerous transformations. To move it to its required place, the NEG-HOPPING TRANSFORMATION of Chomsky (1965) will correctly shift the constituent.

(2) Three separate ADV's are listed in this set of phrase structure rules. This is to account for the three basic types of adverbs; location, manner and time (Chomsky 1965: 101-105). All three of these may occur with the IMP so all are stated here.

(3) The ADV is further divided into Adverb which represents the lexical adverbs such as tam, bystro and PP which represents adverbs formed from prepositional phrases, e.g. po ulice, v prošlom godu.

The system proposed here requires a separate constituent for each sentence type: (NEG) for negatives, (Q) for questions, (IMP) for imperative. Although this is the basic Chomsky (1965) model, its origin is to be found in the research of other linguists.[3] A very significant work from the same period which greatly influenced the Chomsky model was Katz and Postal (1965). Among the theoretical points of this article which have been incorporated into the Chomsky model was the concept of the (IMP) constituent.

---

[3] To the best of this author's knowledge the origin of the separate constituent model is to be found in an article by Lees (1964).

Other methods for deriving imperatives have been used in generative linguistics. Chief among them are hypersentences and/or performatives. In essence, these methods account for imperatives by means of a higher constituent sentence built into the phrase structure rules with a general meaning of "I order you..." (R. Lakoff, 1968: 172).[4]

The (IMP) constituent method has been chosen by the present author for this study because it appears to derive the data in a concise and compact way with a minimum of syntactic formalisms and machinery.

III. MAJOR LEXICON

Grammatical Feature Rules

[+PRO] → [±first]

[-first] → [±second]

[+N] → [±masc]

[-masc] → [±fem]

Lexical Redundancy Rules

[-ANIM] → [-HUM]

[+HUM] → [+ANIM]

[+writeable] → [-ANIM]

[+PRO] → [+N, +ANIM]

[+PRO] → [-STRESS][5]

[+plural] → [+polite]

---

[4] For a discussion of this type of derivation see R. Lakoff (1968), Austin (1962), Ross (1968), Sadock (1969, 1970).

[5] The reason for specifying the pronouns as being redundantly [-STRESS] will become clear in the transformational component.

III. MAJOR LEXICON (CONT.)

Lexical Entries

s,id,e	[+V][+ANIM___][6]
p,isa	[+V][+HUM___ +writeable]
p,ok	[+V][+HUM___ (NP)]
lga	[+V][+HUM___]
igraj	[+V][+ANIM___ (NP)]
govor,i	[+V][+HUM___]
doklad	[+N][+writeable]
xl,eb	[+N][-ANIM]
tam	[+ADVERB][+LOCATION]
bystro	[+ADVERB][+MANNER]
po-angl,ijski	[+ADVERB][+MANNER]
ty	[+PRO][+HUM][+second][-plural][-polite]
vy	[+PRO][+HUM][+second][+plural]

---

[6] Aspect will be eliminated from consideration in this thesis because it has no bearing on the proper derivation of the morphological imperative.

IV. TRANSFORMATIONS

1. IMPERATIVE TRANSFER obligatory

	IMP	X	NP	V	Y
	1	2	3	4	5
→	∅	2	3	4	5.
				[+IMP]	

2. CASE ASSIGNMENT obligatory[7]

This transformation will transfer the appropriate case government feature from the syntactic feature specification of the noun governed. For example if the verb is marked [+Dative case government] then the noun it governs will become [+Dative case].

3. AGREEMENT obligatory

The function of this transformation is to provide for the agreement in terms of such syntactic features as person, number, and politeness, between the subject noun phrase and its following verb. For example, if a pronoun subject noun phrase is marked [+second person], [+plural], then the verb will gain these same features through the action of this transformation.

4. EMPHASIS obligatory

If two or more major categories marked as being [-STRESS] occur in a contrastive position within the same #S# then they will be changed to [+STRESS].

---

[17] If the formalism of a particular transformation is irrelevant to the imperative it has been omitted.

5. PRO DELETION obligatory

	X	N	Y	V	Z
		+PRO -STRESS		[+IMP]	
	1	2	3	4	5
→	1	∅	3	4	5

The only ordering which is necessary involves transformation (1) which must be ordered before transformation (3), otherwise [+second person] would be assigned to the verb giving, for example, *govoriš'* rather than *govori!*. The *Emphasis Transformation* must precede transformation (5) or else the pronoun would not be deleted properly in all instances. No other ordering is essential.

Because Russian has a language-specific morphological imperative used only for the second person, the transfer of the (IMP) constituent to the verb is responsible for the proper assignment of the imperative desinence. Intonation manifests itself on the entire S and not on any constituent part.

V. SEGMENTALIZATION RULES and the MINOR LEXICON

Before proceeding with the segmentalization rules and the minor lexicon, justification of the proposed internal constituent structure is required. The base forms used in the lexicon are essentially those of Halle (1961, 1963), the structure given by the lexicon being [(root) + (verbal suffix)]. Unless one departs from the traditional syntax as Thelin does (see above pp. 70-72) then word formation, as such, must be completed by lexical insertion. This author has not attempted to rework the base forms because this would constitute an additional variable that would render any further sections of the syntactic analysis unanalyzable because of the failure to correspond to the original data.

SEGMENTALIZATION RULES

1. NUMBER and PERSON SEGMENTALIZATION[8]

$$\begin{array}{llll} X & V & Y & \\ & \begin{bmatrix} \alpha \text{ first} \\ \beta \text{ second} \\ \gamma \text{ singular} \end{bmatrix} & & \\ 1 & 2 & 3 & \\ \rightarrow 1 & 2+[\alpha\text{first}, \beta\text{second}, \gamma\text{singular}] & & 3 \end{array}$$

2. IMPERATIVE SEGMENTALIZATION

$$\begin{array}{lll} X & V & Y \\ & [+\text{IMP}] & \\ 1 & 2 & 3 \\ \rightarrow 1 & 2+[+\text{IMP}] & 3 \end{array}$$

which will yield the following, e.g.:

$$\begin{bmatrix} [\text{pisa}] & [\text{IMP}] & \begin{bmatrix} \pm\text{plural} \end{bmatrix} \\ [\text{p,ok}] & [\text{IMP}] & \begin{bmatrix} \pm\text{plural} \end{bmatrix} \end{bmatrix}$$

MINOR LEXICON

i [+Vsfx, +IMP, +second person]

ø [+Vsfx, -plural][9]

te [+Vsfx, +plural]

ne [+NEG]

---

[8] In a larger grammar, there would be other segmentalization rules which would take care of the infinitive, tense, mood, etc.

[9] Other verb suffixes specified ± plural will have selectional features distinguishing them as [-PAST].

The segmentalization rules must apply in the order given, which segment out the outermost suffix first. We have mentioned previously that various data often of a phonological nature has caused some linguists to suggest that the imperative is a derivational rather than an inflectional form. Let us summarize these data briefly:

(1) The imperative [±plural] suffixes /0/ and /te/ occur elsewhere than in the second person imperative, e.g. *davajte!*, *pojdemte!*, and as mentioned above *mersite!* (p. 87). The separate imperative ending is to be found only in the morphological imperative.

(2) The presence or absence of the /te/ is determined by the feature composition of the subject NP pronoun. The presence of the imperative is in no such way contextually determined.

(3) The [±plural] suffix is also involved in other processes in the language. There exists a certain interplay between the features [±plural] and [±polite], especially in relation to the other syntactic imperatives, which is much too complex to discuss here. The important point is that the imperative suffix itself is in no way involved.

(4) The above derivation is presented in complete form without any involvement of the complex mechanisms of tense assignment in generative grammar. There is no need to involve these mechanisms, because the imperative is a tenseless form. The existence of the [±plural] desinence in other

forms which exhibit tense, e.g. *pojdemte* is further proof that this form exists on a separate syntactic level from the imperative /i/ suffix.

(5) The imperative /i/ will change to /ø/ as certain stress conditions apply (see Jakobson 1948). No other /i/ desinence of an inflectional nature in Russian truncates according to prescribed stress rules. One could conclude that the imperative /i/ is not purely inflectional; and this could be shown by the bracketing.

(6) At this point one may recall the evidence put forward by Jakobson (1932, 1957) as previously discussed, (see pages 35-36) concerning:

(a) the admissability of certain otherwise unacceptable consonant clusters in the imperative.

(b) the appearance of vowel characteristics which differ phonetically from what one would expect in the imperative, if it were a purely inflectional desinential form.

(c) the already much-discussed behavior of the dentals plus the reflexive particle, which behaves differently in the imperative than in the infinitive.

Despite this evidence, the syntactic bracketing given as a result of the segmentalization rules does not imply any difference between the imperative and [±plural] desinences. If the former was derivational and the latter inflectional, one might expect inclusion relation bracketing of the following type to appear:

[[[p,isa] + [i]] + [te]]   or   [[[p,ok] + [i]] + [0]]

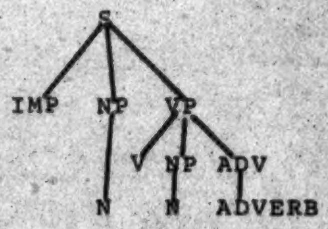
The type of bracketing which the present segmentalization rules give is based on a sister node relationship of the desinences (Grinder and Elgin 1973). This supports the claim that the rule for imperative assignment is morphologically conditioned. In connection with the stated evidence, the above-given inclusion relation bracketing could be obtained only through the process of Chomsky adjunction (Grinder and Elgin 1973) which implies a solution where the rules involved are phonologically conditioned. As will be more fully discussed below, further attempts to formalize this claim must wait until more is known of the generative linguistic approach to morphology.

SAMPLE DERIVATIONS

for datum #2:   pišite doklad bystro!

Base component: #S#

S → IMP NP VP
VP → V NP ADV
NP → N
ADV → Adverb



Lexical Insertion =

$$[\text{IMP}] \begin{bmatrix}\text{VY}\\ +\text{PRO}\\ +\text{HUM}\\ +\text{second}\\ +\text{plural}\end{bmatrix} \begin{bmatrix}\text{p,isa} & \\ +\text{V} & \\ +\text{HUM}\_\_\_ & +\text{writeable}\end{bmatrix} \begin{bmatrix}\text{doklad}\\ +\text{N}\\ +\text{writeable}\end{bmatrix} \begin{bmatrix}\text{bystro}\\ +\text{ADVERB}\\ +\text{MANNER}\end{bmatrix}$$

TRANSFORMATIONS: (only results shown)

1. IMP TRANSFER: p,isa becomes [+IMP], [IMP] → ø
2. CASE ASSIGNMENT: VY becomes [+NOM], doklad [+ACC]
3. AGREEMENT: Not applicable
4. EMPHASIS: Not applicable
5. PRO DELETION: VY → ø

Segmentalization Rules:

1. Number and Person Segmentalization
2. Imperative Segmentalization

Minor Lexicon Insertion:

output →

[[[p,isa] [i] [t,e]] [doklad] [bystro]]

This will be the input into the phonological component.

SAMPLE DERIVATION:

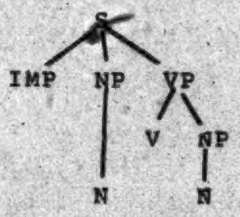
for datum #3: pekite xleb!

Base component: #S#

S → IMP NP VP

VP → V NP

NP → N



Lexical Insertion:

$$[\text{IMP}] \quad \begin{bmatrix}\text{VY}\\ \text{+PRO}\\ \text{+HUM}\\ \text{+second}\\ \text{+plural}\end{bmatrix} \quad \begin{bmatrix}\text{p,ok} & \\ \text{+V} & \\ \text{+HUM}\_\_\_ & \text{(NP)}\end{bmatrix} \quad \begin{bmatrix}\text{xleb}\\ \text{+N}\\ \text{-ANIM}\end{bmatrix}$$

TRANSFORMATIONS: (only results shown)

1. IMP TRANSFER: p,ok becomes [+IMP]

2. CASE ASSIGNMENT: vy becomes [+NOM], xleb becomes [+ACC]

3. AGREEMENT: Not applicable

4. EMPHASIS: Not applicable

5. PRO DELETION: vy → ∅

Segmentalization rules:

1. Number and Person Segmentalization

2. Imperative Segmentalization

Minor Lexicon Insertion:

Output →

[[[p,ok] [i] [t,e]] [xleb]]

This will be the input into the phonological component.

Lexical Insertion:

$$[\text{IMP}] \quad \begin{bmatrix} \text{VY} \\ +\text{PRO} \\ +\text{HUM} \\ +\text{second} \\ +\text{plural} \end{bmatrix} \quad \begin{bmatrix} \text{p,ok} \\ +\text{V} \\ +\text{HUM}\_\_\_\ (\text{NP}) \end{bmatrix} \quad \begin{bmatrix} \text{xleb} \\ +\text{N} \\ -\text{ANIM} \end{bmatrix}$$

TRANSFORMATIONS: (only results shown)

1. IMP TRANSFER: p,ok becomes [+IMP]

2. CASE ASSIGNMENT: vy becomes [+NOM], xleb becomes [+ACC]

3. AGREEMENT: Not applicable

4. EMPHASIS: Not applicable

5. PRO DELETION: vy → ∅

Segmentalization rules:

1. Number and Person Segmentalization

2. Imperative Segmentalization

Minor Lexicon Insertion:

Output →

[[[p,ok] [i] [t,e]] [xleb]]

This will be the input into the phonological component.

SUMMARY AND CONCLUSIONS FOR PART I

In light of the questions posed at the beginning of this chapter, it is appropriate to see if the above analysis provides any answers to the problems of constituent structure which we have put forward. We may conclude the following.

(1) The above analysis was successfully presented without involving tense distinctions. This renders the syntactic validity of Halle's present tense theme constituent somewhat suspect. However, it should be borne in mind that semantically the imperative is lexically specified as [-PAST] and that it is generally accepted that it is formed in a like manner to the non-past forms of the verb. Our analysis simply demonstrates that in a practical, purely formalistic syntactic analysis, which is limited in scope, the imperative does not crucially require a present tense constituent.

(2) It has been suggested and some supportive evidence given that the segmentalization of the Russian morphological imperative provides a derivational rather than an inflectional desinence. The concept of inclusion relation bracketing has been proposed to account for this situation, although no definitive evidence exists at this time to make this bracketing mandatory.

(3) Considering the above conclusion there appears therefore to be considerable syntactic justification for Jakobson's and Halle's proposed boundary between the imperative and the [±plural] desinence. When the readjustment rules (Chomsky and Halle 1968: 371-372 and others) transforms the bracketing into boundaries at the beginning of the phonological component,

there will be an appropriate bracket for this boundary. (4) There appears to be no syntactic justification, on the other hand, for any sort of additional boundary such as the one which Halle proposed between the lexical stem and the imperative desinence, only for verbs with stem final velars such as peki!. We must conclude that this boundary is a device, a simple diacritic with no syntactic origin.

Before continuing to discuss other problems, one important facet of the entire question as it relates to syntax remains to be discussed. One of the difficulties in interpreting the various generative approaches is the mixing of levels at which a given alternation takes place. It seems that linguists are taking too much for granted when they assume that alternations in the phonology must behave identically regardless of whether they operate on the inflectional or derivational level. For example, can the (T → Č) alternation which occurs in verb derivations such as vstrétit' versus vstrečát' be unequivocally equated with (T → Č) alternations within forms of the same verb, e.g. pisát' versus piší! or with alternations of a purely inflectional nature, e.g. vstréču versus vstrétiš? One may conclude that this question remains open.

The problem is further complicated by an inbalance of information within generative theory. In the traditional Chomsky (1965) model, inflection takes place by means of transformations viz. case assignment, agreement, etc. Numerous syntactic studies operating under this theory have been published. On the other hand, derivation presumably is carried out in the lexicon, an area of description not yet sufficiently probed.

The question then becomes: What has been done to account for derivation in generative linguistics? Schane (1973) summarizes this situation most succinctly, "Derivational morphology is one of the least understood areas of modern linguistics"(p. 107). While it would not be proper to discuss in a lengthy manner all the areas of present research, a brief incursion into those theories most relevant to the topic of verb stem derivation is acceptable.

The one-stem concept proposed by Jakobson has not remained unchallenged. Stankiewicz (1962) first proposed a new two-stem classification, one inflectional and the other derivational. This idea has been modified by Worth (1967). The two-stem proposal will be discussed in light of Worth's innovations.

Worth first argues that derivation is a morphological process not a lexical one as has been claimed in the past. He asserts that both processes form an interdependent but hierarchically structured system. Attention is then turned to an analysis of Stankiewicz's system. Worth characterizes his system as being, "In accord with his view...that flexion and derivation are two separate but interrelated systems. Stankiewicz proposes to set up two distinct stems for each word family, one for the base word and the other for derivations, being treated as containing the same underlying stem." (pp. 2280-2281).

Worth criticizes Stankiewicz's proposal on three grounds:

(1) Some of the derivative stems appear to have two forms,

(2) No exact method is proposed for determining fine phonetic choices,

(3) The degree of specificity between all stems is not uniform.

Worth's solution is characterized by the retention of two stems but with a more detailed set of derivational rules and a broader transcription (pp. 2282-2283).

The remainder of the article constitutes a general formalization of the above paragraphs. Although described as a "two-stem" analysis, he actually proposes one basic stem to which a second stem is hierarchically related. There exists a "derivational basic stem" which he defines as, "that entity from which all of the given F-stems[10] can most economically be predicated."(p. 2284). The "flexional stems" are obtained from the "derivational basic stem" by a means of a set of "derivational rules". The proper phonetic shapes are then obtained from the "flexional stems" by means of a series of "flexional rules".

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[10] "Flexional stems".

The present author agrees in general with Worth's proposal and sees in it one possible direction for future study which seems to have considerable merit. Worth expresses this hope quite concisely, "The innovations suggested in the foregoing pages present a possible synthesis of Stankiewicz's two-stem proposal (in a considerably revised form) with Jakobson's pathbreaking concept of the basic stem." (p. 2288).

This is not the only line of research presently being conducted. Some researchers are attempting to account for verbal derivational processes by further use of extremely abstract base forms with striking similarity to proposed diachronic reconstruction. Among studies of this type are those of Micklesen (1972), and Haršenin (1975). An opposite approach requires large scale remodeling of the syntax to incorporate sophisticated new derivational schemes; the research of Regier (1974) and Thelin (1973) exemplifies this approach. Unfortunately, all of these are too complex to allow for easy summary at this point. Future research will no doubt elucidate the presently unclear relationship between derivational and inflectional processes. When this has been accomplished, our knowledge of the role of the imperative and the alternations which it exhibits within the Russian verbal system will be greatly clarified.

PART II: THE EXCEPTIONS TO THE (K → Č) RULE

In Chapter Three we discussed the various ways in which certain forms are treated as being exceptions to the (K → Č) palatalization. This primarily concerns such verbs as *peč'* ∿ *pekí!*. Let us review briefly how this problem has been handled by the main linguists whom we have discussed.

(1) Halle introduced the = boundary, between the stem ending and the imperative desinence; this boundary blocked the application of the (K → Č) rule.

(2) Lightner referred this specific question to a later volume, but judging from his treatment of other similar phenomena, and the overall tenor of his work, it is not unreasonable to assume that he would solve this question by positing a change in the underlying for of the imperative desinence. He already modifies this desinence near the end of the book by postulating OI instead of I.

(3) Thelin solved the question by altering the environment of the rule in such a way that (K → Č) always occurred before an /e/ whether a morpheme boundary was present or not, but such a change did not occur if the boundary was present before an /i/.

At this point it should be made clear that the number of verbs in which this exception takes place is quite limited. A composite list of such verbs is given in Appendix II of this thesis. It may be seen that only sixteen verbs are involved; these verbs are members of an unproductive class which represents a fossil situation in the language.[11]

It will be remembered that there was no syntactic justification for the existence of the boundary which Halle proposed; neither does there appear to be any additional supportive evidence for Thelin's claim that there is a substantive difference between /e/ and /i/ or that the morpheme boundary behaves differently in two similar environments.

In light of all of the above, this author proposes that these forms but treated as what they really are, exceptions in the general phonology of Russian.

We therefore must examine the means for treating exceptions available in the generative framework. Several studies are available which summarize these procedures.

Upon consulting Hyman (1970), Wilbur (1973) and Brasington (1972) a concise idea may be gained of the means for considering exceptions. In summarizing their findings one may conclude that the following general methods exist:

(1) diacritic use of abstract phonological segments,

(2) phonologic use of diacritics,

(3) rule features or exception features,

(4) alphabet or diacritic features,

(5) rule environment features,

(6) minor rules.

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[11] For a discussion of an analysis in French based on a limited number of examples, see Creore (1974).

The general metatheoretical advantages of the individual methods will not be discussed here. Comments will be restricted to the merits of each method with respect only to the specific data in question.

(1) Diacritic use of abstract phonological segments. This procedure is discussed by Hyman (1970: 65-69) and Wilbur (1973: 36-37). The former defines the device as, "the positing of underlying segments which have no distinct realization." (p. 69). Wilbur further expands the definition, "It is possible to prevent forms from underlying a particular phonological rule by assigning them a more abstract underlying representation which does not meet the structural description of that rule." (p. 36). We have already seen an example of this technique. Lightner used the difference between two underlying E's , one tense and one lax, when he altered the (K → C) rule. This was proposed despite the fact there is no significant tense/lax distinction in the surface representation.

(2) Phonological use of diacritics. This technique is discussed in Hyman (1970: 59, 69-70), Wilbur (1973: 38-44) and Brasington (1972: 109-113). The diacritic most frequently employed is a boundary. Wilbur states, "Boundaries can be used in many cases to prevent the application of a phonological rule or to trigger the overapplication of a rule. This can be done by altering the boundaries...[, the format of the] rule, or both." (p. 39). It seems to this author that if the boundary

so used has motivation elsewhere in the language then its use to block a rule is justifiable, if not desirable. When one reads Chomsky and Halle (1968: 364-373), it is clear that boundaries are meant to be introduced either by a general convention (p. 364 re: formant boundary) or with syntactic justification (p. 366 re: word boundary). Therefore it appears that boundaries which have no syntactic origin should be omitted from consideration. As demonstrated above, the boundary which Halle uses to block the (C → TS) rule has no syntactic origin within the imperative derivation; it does not coincide with the boundary presentation in Halle (1959: 41, 49-50), nor does it ever appear again in any work of Halle's which deals with Russian. On these grounds, the acceptability of this boundary as an adequate device to account for exceptions must be rejected.

Before continuing, it should be pointed out that there is a significant difference between these two methods and the remaining four. The four remaining devices make the overt claim that they are techniques to account for exceptions. The use of diacritics and the diacritic use of phonetic segments disguise the exceptional nature of the phenomenon in which they appear. Attempts to alter either the environment or the underlying representation amount to trying to force an exceptional situation into being regular, at least at the most surficial level. It is this reasoning which leads the present

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author to conclude that the solution to the (K → Č) rule in data such as pekił may be more advantageously presented in the less concealing techniques.

(3) Rule or exception features. This is one of the two means for coping with exceptions which Chomsky and Halle (1968) propose. It is quite widely discussed in the literature, viz, by Hyman (1970: 70-72), Wilbur (1973: 45-47), Brasington (1972: 102-104), Coats (1970: 111-122), Lightner (1972: 401) and numerous others. Chomsky and Halle (1968: 374-375) define it as follows: "The natural way to reflect such exceptional behavior in the grammar is to associate with such lexical items diacritic features referring to particular rules, that is, features of the form [α rule n], where α is, as before, a variable ranging over the values + and – and n is the number of the rule in question in the linear ordering...The feature [– rule n] must either be introduced by readjustment rules or appear as diacritic features in the lexical representation of an item." An exception to a given rule is simply marked [– rule n] and the rule will not apply. Since Coats (1970) deals with this device in terms of the (K → Č) rule further discussion will be held until his proposals are reviewed below.

(4) Alphabet features. The use of arbitrary alphabetical symbols to express exceptions is the second device directly proposed by Chomsky and Halle (1968). In the original, it is not discussed as fully and has received much less attention

than rule features. Other than in the source of its original occurrence, it is discussed only by Coats (1970: 115-116) and Brasington (1972: 106-107). The presentation in Chomsky and Halle (1968: 377-380) is diffuse, which makes an easily quotable definition difficult. In summary the process is basically as follows: If one group of lexical items exhibits a particular phenomenon, they receive via a readjustment rule a diacritic [+B] in their feature specification; if they do not, they receive [-B]. Phonological rules are then employed which will carry [αB] specifications in their environments in order to obtain the proper function of the rule in avoiding exceptions. We shall see below what Coats (1970) discovers concerning this device and the (K → Č) rule.

(5) Rule environment features. Coats (1970) and Kisseberth (1970) apparently invented this device at the same time. This method is an outgrowth of the insufficiency of the above described techniques to always accomplish their purpose. As Kisseberth mentions, the possibility to extend rule features is found in Chomsky and Halle (1968). He quotes the following from the above work (p. 375), "The issue is whether the context in which a segment appears should be permitted to block the application of a rule to this segment, even if the segment itself is not specified as an exception to this rule." Kisseberth (1970: 52). Kisseberth extends this proposal and postulates rule environment features of the type [α context rule x]. The feature [α context rule x] would be specified

for each lexical item. He further constrains this device saying, "a morpheme may block application of a phonological rule only by virtue of having one or more of its segments in the context governing application of the rule." (p. 57). Obviously, this device is most applicable when a lexical item fails to undergo a certain rule only in specific contexts.

(6) Minor rules. Most of the above devices are related to one another functionally if not generically. One other technique remains which is not so closely connected. This is the concept of "minor rule". It was first proposed for syntax by G. Lakoff (1965) in his dissertation. It was adapted for phonology for Lightner (1968). It has since been discussed by Wilbur (1973: 47-50) and Brasington (1972: 104-105). As formulated by Lightner the technique may be described as follows: "All forms are automatically subject to the application of all major rules unless they are specifically marked as not undergoing a certain major rule. The convention for application of minor rules is that no form is subject to the application of a minor rule unless the form is specifically marked as undergoing a certain minor rule." (p. 70). It can easily be seen that this technique is most suitable in those situations where the majority of forms appear to be an exception to a perfectly natural process to which only a minority of forms correspond. This avoids the virtual redundancy of specifying the majority of the data as "exceptions" when, indeed, they are not.

Having now examined the various means available for handling exceptions, let us consider the applicability of the last four to the (K → Č) exception. Three of these are discussed in the very illuminating and perceptive article by Coats (1970).

Coats begins by presenting various exceptions from Russian phonology based on the general theory of Lightner. His first example is the failure of the root TUK, to undergo the (K → Č) alternation in any of its forms. Coats easily solves this by a rule feature [-(K → Č) rule]. Of the four other exceptions he discusses, one is the failure of the imperative *peki!* to undergo (K → Č). The root itself cannot be marked with a rule feature because other forms of the same verb, e.g. present tense *pečet* do undergo the rule. Coats, therefore, assigns an arbitrary alphabet feature to the imperative suffix. He states, "we can, however, say that the suffixes mentioned above are marked -A, and then restrict (K → Č) to apply to a velar only if the vowel following the velar is marked +A. In this analysis, (K → Č) would be formulated as follows:

$$(30)\quad (K \rightarrow \check{C}),\ [-\ \text{ant}] \rightarrow [-\ \text{back}] / \underline{\quad\quad} \begin{bmatrix} -\text{cons} \\ -\text{back} \\ +\text{A} \end{bmatrix} ." \quad (\text{p. } 121).$$

This solution of the (K → Č) rule exception does work for *peki!*. Coats observes that in all his examples the alphabet features serve the same function: to block the application of a rule when the particular environment condition is not met. This conclusion led Coats to the proposal to eliminate all the alphabet features and replace them with rule environment features. Coats was proposing this device for the first time and gave considerable motivation for its use (pp. 129-135). We refrain from examining his arguments in detail because it goes beyond the scope of this thesis to evaluate alternative linguistic conventions. In Coats' analysis the imperative suffix is marked "-ER (K → Č)" (p. 133), that is minus the environment for the (K → Č) rule to operate.

This analysis has received support from Kim (1973: 131) who argues for a reworking of readjustment rules[12]. Kim finds that this solution is more closely related to what he feels the role of the readjustment rule to be.

We have not yet discussed the minor rule solution. To employ this solution it would be necessary to postulate that the (K → Č) alternation is a minor rule. If the (K → Č) rule is presumed to be phonologically conditioned, then the solution of a minor rule is unacceptable as there would be too many exceptional classes to be specified.

One must conclude that the best way of handling the exceptions of the *peki!* variety is by the technique of rule environment features as Coats proposed.

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[12] It will be remembered that readjustment rules are used to insert alphabet features.

SUMMARY AND CONCLUSIONS

The approaches of various generative linguists to the phonology of the Russian imperative have been examined. None of the solutions appear to properly account for all the forms in an acceptably natural and consistent way. The various problems involved have been enumerated and examined on an individual basis. It would be most rewarding if it were possible to present a definitive solution to the problem at this point, but unfortunately, as can be seen by the numerous questions raised in this thesis, too many areas of generative linguistics remain unexplored or are too controversial and unstable to advance such a proposal at this time. The following conclusions may be drawn as to the main points of the phonology of the Russian imperative which this study has demonstrated.

(1) There is no syntactic motivation for the consistent claim that the present tense theme vowel must occur in the constituent structure of the imperative.

(2) The boundary proposed by Halle that supposedly occurs after the stem of the imperative but before its desinence has been shown to be unjustified.

(3) The boundary proposed by Jakobson to exist after the imperative desinence has been shown to have validity on both syntactic and phonological evidence.

(4) Based on phonological evidence the existence of the imperative as a derivational rather than an inflectional form has been discussed. A definitive solution must wait until extensive research has been accomplished in the field of generative morphology and word formation.

(5) Forms of the imperative such as pekil are held to be exceptional if (K → Č) is a phonologically conditioned rule as previously discussed (pp. 2, 40). Any proposals which claim to incorporate the absence of the (K → Č) alternation in these forms into a regular phonological system appear false. This study agrees with Coats' findings that the method of "rule environment features" best handles this kind of exception.

(6) Many linguists have long considered transitive softening to be one unified process. On the basis of "naturalness" this phenomenon is best accounted for in three separate processes: (K → Č), (T → Č), and (ø → L).

(7) The environment for the transitive softening rule proposed by Halle (C → TS/___a + o) has been found to be most unacceptable on the basis of phonological and syntactic evidence.

All of these points enumerated here should serve as prerequisites on which future analyses can be based. The value of a thesis such as this is that it solves several small but critical problems, and in doing so clarifies the larger areas where linguistic research should be conducted as well as to point the directions in which this research should most profitably be guided.

Until more research is done on topics such as (1) derivational morphology, (2) distinctive features systems, (3) naturalness, and (4) exception theory, the imperatives like the rest of the Russian verbal system itself, will remain an object of linguistic research, and eventually these major areas of investigation in conjunction with this and other smaller studies will achieve a proper and adequate analysis of these data.

APPENDIX ONE

DATA SHEET EXHIBITING VARIOUS FORMS OF THE RUSSIAN IMPERATIVE[1]

Type One:

infinitive	imperative[2]
čitát'	čitáj![3]
risovát'	risúj!
stoját'	stój!
pét'	pój!
boít'sja	bójsja!
pít'	péj!
šít'	šej!
davát'	daváj!
vladét'	vladéj!
exat'	poezžáj!

Type Two:

vérit'	vér'!
brósit'	brós'!
prjátat'	prjáč'!
súnut'	sún'!
sest'	sjád'!
udárit'	udár'!
sýpat'	sýp'!
mázat'	máž'!
ést'	éž'!
gotóvit'	gotóv'!
plákat'	plač'!
kínut'	kín'!
vstát'	vstán'!
výnut'	výn'!
odét'sja	odén'sja!
lézt'	léz'!
sprjátat	sprjáč'!
léč'	ljag!

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[1] Data is a composite from Isačenko (1960: 479-481) and Ružička (1966: 9-11).

[2] Although these are transliterated forms, and should be underlined as determined in the "Explanatory Table for Notations and Conventions" the underlining has been omitted here for the sake of presenting an easily readible table.

[3] These verbs are grouped according to the type of ending illustrated and are not meant to exhibit any other classification scheme.

Type Three:

infinitive	imperative
nestí	nesí!
govorít'	govorí!
skazát'	skaží!
brát'	berí!
rešít'sja	rešís'!
beréč'	beregís'!
vernút'	verní!
napisát'	napiší!
xoxotát'	xoxočí!
péč'	pekí!
isčéznut'	isčézni!
prodólžit'	prodólži!
umólknut'	umólkni!
končát'	kónči!
kroját'	kroí!
kleít'	kleí!
smotrét'	smotrí!
deržát'	dérží!
dérnut'	dérni!
pomóč'	pomogí!

APPENDIX TWO

COMPOSITE OF VERBS WHICH FAIL TO UNDERGO (K → Č) RULE[1]

	verb	imperative	meaning
1.	beréč'[2]	beregí!	"take care of, protect"
	izberéč'	izberegí!	"preserve"
2.	vleč'	vlekí!	"draw, attract" (Bookish)
3.	volóč'	volokí!	"draw, drag"
4.	žeč'	žgi!	"burn"
	sžeč'	sožgí!	"incinerate"
	razžéč'	razožgí!	"kindle"
5.	leč'	ljag!	"lie, recline"
6.	moč'	mogí![3]	"be able"
	pomóč'	pomogí!	"help"
7.	obléč'	oblekí!	"clothe, invest" (Bookish)
8.	peč'	pekí!	"bake"
9.	prenebréč'	prenebregí!	"neglect, disregard" (Bookish)
10.	-prjač' (exists only in prefixed forms)		
	zaprjáč'	zaprjagí!	"harness"
	otprjáč'	otprjagí!	"unharness"
	rasprjáč'	rasprjagí!	"unharness"
11.	-reč' (exists only in prefixed forms)		
	naréč'	narekí!	"name" (Bookish)
	izréč'	izrekí!	"utter, speak solemnly" (Bookish)
	otréč'sja	otrekís'!	"renounce, disavow" (Bookish)
12.	seč'	sekí!	"flog, whip"
13.	steréč'	steregí!	"guard, watch over"
	predostereč'	predosteregí!	"warn, caution"
14.	strič'	strigí!	"cut, clip"
15.	teč'	tekí!	"flow, run"
16.	tolóč'	tolkí!	"pound"

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[1] Data is a composite from Karcevskij (1927: 72-73), Lightner (1972: 124), Isačenko (1960: 92-97).

[2] Although these are transliterated forms, and should be underlined as determined in the "Explanatory Table for Notations and Conventions", the underlining has been omitted here for the sake of presenting an easily readible table.

[3] The imperative form of moč' is not used on semantic grounds.

APPENDIX THREE

VERBS WHICH DEMONSTRATE TRANSITIVE SOFTENING[1]

1. VELAR ∿ PALATAL ALTERNATIONS 21 verbs (non-prefixed)

verb	meaning
alkát'[2]	"crave" (obsolete)
brexát'	"bark, tell lies"
brýzgat'	"splash, spatter"
dvígat'	"move"
iskát'	"search"
klíkat'	"call"
kolyxát'	"sway, rock gently"
lokát'	"lap up"
maxát'	"wave, wag"
murlýkat'	"purr"
mýkat'	"live in poverty"
paxát'	"plough, till"
plákat'	"cry"
pleskát'	"splash, lap"
poloskát'	"rinse"
pyxát'	"blaze"
rukopleskát'	"applaud"
rýskat'	"rove"
skakát'	"skip, jump"
týkat'	"jab"
xnýkat'	"snivel"

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[1] Data is a composite from Karcevskij (1927: 63-66), Lightner (1972: 125), Isačenko (1960: 67-77).

[2] Although these are transliterated forms, and should be underlined as determined in the "Explanatory Table for Notations and Conventions", the underlining has been omitted here for the sake of presenting an easily readible table.

2. DENTAL ~ PALATAL ALTERNATIONS 28 verbs (non-prefixed, non-onomatopoeic)[3]

verb	meaning
blystát'	"shine"
vjazát'	"bind"
glodát'	"gnaw"
kazát'sja	"seem"
klevetát'	"slander"
lizát'	"lick"
mázat'	"oil, lubricate"
metát'	"throw"
nizát'	"string, thread"
objazát'	"bind"
pisát'	"write"
pljasát'	"dance"
(o)pojásat'	"gird"
prjátat'	"conceal"
rézat'	"cut"
svistát'	"whistle"
skrežetát'	"gnash"
slat'	"send"
stradát'	"suffer"
tesát'	"hew"
toptát'	"trample down"
trepetát'	"tremble"
xlestát'	"lash, whip"
xlopotát'	"bustle about"
xlystát'	same as xlestat'
česát'	"comb"
šeptát'	"whisper"
ščekotát'	"tickle"

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[3] In addition there is a large, and presumably productive, class of verbs which exemplify this alternation and which are imitative or onomatopoeic in meaning. The combined sources listed 10 other verbs which this author has omitted from the above data sheet as being members of this class. In some instances the choice as to being of onomatopoeic in meaning was quite difficult, but this author only omitted those verbs which followed the -otát' pattern, e.g. bormotát' "to mutter".

3. LABIAL plus LIQUID 13 verbs

verb	meaning
dremát'	"dream"
zobát'	"gobble"
zýbat'	"shake, rock"
kápat'	"drip"
klepát'	"malign"
kolebát'	"vacillate"
krápat'	"be spitting"
sýpat'	"pour"
trepát'	"stroke with one's fingers"
xrepát'	"wheeze"
xromát'	"limp"
ščepát'	"chip"
ščipát'	"pinch"

BIBLIOGRAPHY

Arcixovskij, A. V. (1953-1960). Novgorodskie gramoty na bereste, Vol. I- . Moskva: Akademija Nauk.

Austin, J. L. (1962). How to do Things with Words, Second edition. Oxford: Clarendon Press.

Avanesov, R. I. (ed.) (1957). Atlas russkix narodnyx govorov central'nyx oblastej k vostoku ot Moskvy. Moskva: Akademija Nauk.

Avanesov, R. I. and Orlova, V. G. (1965). Russkaja dialektologija. Moskva: Nauka.

Borkovskij, V. I. and Kuznecov, P. S. (1963). Istoričeskaja grammatika russkogo jazyka. Moskva: Akademija Nauk.

Botha, R. (1971). Methodological Aspects of Transformational Generative Phonology. The Hague: Mouton.

Brasington, R. W. P. (1972). "The Treatment of Exceptions in Phonology". Lingua 29: 101-119.

Bromlej, S. V. and Bulatova, L. N. (1972). Očerki morfologii russkix govorov. Moskva: Nauka.

Černyx, P. Ja. (1962). Istoričeskaja grammatika russkogo jazyka. Moskva: Učpedgiz.

Chomsky, N. (1957). Syntactic Structures. The Hague: Mouton.

Chomsky, N. (1964). "The Nature of Structural Descriptions", pp. 60-110. Current Issues in Linguistic Theory. The Hague: Mouton.

Chomsky, N. (1965). Aspects of the Theory of Syntax. Cambridge, Massachusetts: MIT Press.

Chomsky, N. (1967). "Some General Properties of Phonological Rules". Language 43.1: 102-128.

Chomsky, N. and Halle, M. (1968). The Sound Pattern of English. New York: Harper & Row.

Coats, H. (1970). "Rule Environment Features in Phonology". *Papers in Linguistics* 2.1: 110-140.

Creore, J. A. (1974). "French Phonology and Morphology". *The Canadian Journal of Linguistics* 19.2: 107-121.

De Armond, R. C. (1968). "The Concept of Word Derivation". *Lingua* 22: 329-361.

De Bray, R. G. A. (1969). *A Guide to the Slavonic Languages*, Third edition. London: Dent.

Derwing, B. (1973). *Transformational Grammar as a Theory of Language Acquisition*. Cambridge: University Press.

Durnovo, N. (1959). *Očerk istorija russkogo jazyka*. The Hague: Mouton. (reprint 1924 Moskva: Gosizdat).

Eckman, F. (1974). *Optional Rules and Inclusion Relations*. Mimeographed, Indiana University Linguistic Club.

Filin, F. P. (1972). *Proisxoždenie russkogo, ukrainskogo i belarusskogo jazykov*. Leningrad: Nauka.

Flier, M. (1972). "On the Source of Derived Imperfectives in Russian", pp. 236-260. in Worth, D. (ed.), *The Slavic Word*. The Hague: Mouton.

Fromkin, V. (1970). "The Concept of Naturalness in a Universal Phonetic Theory". *Glossa* 4.1: 29-45.

Gorškova, O. V. and Xmelevskaja, T. A. (1963). *Sbornik uprjažnenij po dialektologii*. Moskva: Učpedgiz.

Grinder, J. T. and Elgin, S. M. (1973). *Guide to Transformational Grammar*. New York: Holt, Rinehart and Winston, Inc.

Halle, M. (1959). *The Sound Pattern of Russian, A Linguistic and Acoustical Investigation*. The Hague: Mouton. (reprint, 1971).

Halle, M. (1960). Review of Avanesov, R. I. *Fonetika sovremennogo russkogo literaturnogo jazyka*. *Word* 16: 140-153.

Halle, M. (1961). "Note on Cyclically Ordered Rules in the Russian Conjugation". *Quarterly Progress Report of the MIT Research Laboratory in Electronics* 63: 149-155.

Halle, M. (1963). "O pravilax russkogo sprjaženija". *American Contributions to the Fifth International Congress of Slavists, Vol. I. Linguistic Contributions*. The Hague: Mouton.

Halle, M. (1971). "Word Boundaries as Environments for Rules". Linguistic Inquiry 2: 540-541.

Harms, R. T. (1968). Introduction to Phonological Theory. Englewood Cliffs, N.J.: Prentice Hall Inc.

Harris, Z. S. (1951). Structural Linguistics. Chicago: University of Chicago Press. (reprint 1969).

Harshenin, A. P. (1975). "A Reclassification of the Russian Verb System". Unpublished manuscript.

Hetzron, R. (1972). "Phonology in Syntax". Journal of Linguistics 7: 251-265.

Holden, K. T. (1974). Review of Lightner, T. M. Problems in the Theory of Phonology. Glossa 8.2: 279-298.

Hyman, L. M. (1970). "How Concrete is Phonology". Language 46.1: 58-76.

Isačenko, A. V. (1960). Grammatičeskij stroj russkogo jazyka v sopostavlenii s slovackim, Čast' II Morfologija. Bratislava: Slovackaja Akademija Nauk.

Isačenko, A. V. (1964). "On the Conative Function of Language". pp. 88-97. in Vaček, J. (ed.). A Prague School Reader in Linguistics. Bloomington: Indiana University Press.

Ivanov, V. V. (1960). Razvitie grammatičeskogo stroja russkogo jazyka. Moskva: Učpedgiz.

Ivanov, V. V. (1964). Istoričeskaja grammatika russkogo jazyka. Moskva: Prosveščenie.

Jakobson, R. (1932). "Zur Struktur des Russischen Verbums". Charisteria Gvilelmo Mathesio oblata. Prague: Cercle Linguistique. (reprinted (1971) in Selected Writings, Vol. II. Word and Language, pp. 3-15. The Hague: Mouton.)

Jakobson, R. (1948). "The Russian Conjugation". Word 4: 155-167.

Jakobson, R. (1957). "Shifters, Verbal Categories and the Russian Verb". Russian Language Project Harvard University. (reprinted (1971) in Selected Writings, Vol. II Word and Language, pp. 130-147. The Hague: Mouton.

Jakobson, R., Fant, C. Gunnar and Halle, M. (1952). *Preliminaries to Speech Analysis, The Distinctive Features and their Correlates*. Cambridge, Massachusetts: MIT Press. (reprint 1972).

Jakubinskij, L. P. (1953). *Istorija drevnerusskogo jazyka*. Moskva: Učpedgiz.

Karcevski, S. (1927). *Système du verbe Russe*, *essai de linguistique synchronique*. Prague: Legiographie.

Katz, J. J. and Postal, P. M. (1965). *An Integrated Theory of Linguistic Descriptions*. Cambridge, Massachusetts: MIT Press.

Kim, C. W. (1973). "Adjustment Rules in Phonology". pp. 130-144, in Kenstowicz, M. and Kisseberth, C. (eds.) *Issues in Phonological Theory*. The Hague: Mouton.

Kiparsky, R. P. V. (1966). "Transitive Softening in Russian". *Quarterly Progress Report of the MIT Research Laboratory in Electronics* 81: 190-192.

Kiparsky, V. (1967). *Russische Historische Grammatik Band II*. Heidelberg: Carlwinter Universitatsverlag.

Kisseberth, C. W. (1970). "The Treatment of Exceptions". *Papers in Linguistics* 2.1: 44-58.

Koutsoudas, A., Sanders, G. and Noll, G. (1974). "The Application of Phonological Rules". *Language* 50.1: 1-29.

Kuznecova, P. S. (1973). *Russkaja dialektologija*. Moskva: Prosveščenie.

Lakoff, G. (1965). *On the Nature of Syntactic Irregularity*. [Report no. NSF 16 to the National Science Foundation, The Computation Laboratory of Harvard]. Cambridge, Massachusetts: University Press.

Lakoff, R. T. (1968). *Abstract Syntax and Latin Complimentation*. Cambridge, Massachusetts: MIT Press.

Lees, R. G. (1964). "On Passives and the Imperative in English". *Gengo Kenkyu* 46: 28-41.

Lenček, R. L. (1973). "On the Morphophonemic Patterning of the Slavic Imperative", pp. 169-210. American Contributions to the Seventh International Congress of Slavists. I Linguistic Contributions. The Hague: Mouton.

Leška, O. (1968). "Formálnia Funkčně Obsahová Struktura Ruskeho Imperativu (Injunktivu)". pp. 7-51. Kapitoly ze srovnávaci mluvnice ruské a české 3: O rusském slovese. Prague.

Lightner, T. M. (1965). "On Cyclical Rules in the Russian Conjugation". Voprosy Jazykoznanija 14.2: 45-54.

Lightner, T. M. (1966). "Ob alternacii e ∿ o v sovremennom russkom literaturnom jazyke". Voprosy Jazykoznanija 15.5: 64-80.

Lightner, T. M. (1967). "On the Phonology of the Russian Conjugation". Linguistics 35: 35-55.

Lightner, T. M. (1968). "On the Uses of Minor Rules in Russian Phonology". Journal of Linguistics 4: 69-72.

Lightner, T. M. (1972). Problems in the Theory of Phonology, Vol. I. Edmonton: Linguistic Research Inc.

Lyons, J. (1968). Introduction to Theoretical Linguistics. Cambridge: University Press.

Matthews, W. K. (1960). Russian Historical Grammar. London: The Athlone Press.

Meščerskij, N. A. (1972). Russkaja dialektologija. Moskva: Vysšaja Škola.

Mickelsen, L. R. (1972). "The Structure of the Russian Verb Stems", pp. 261-282. Worth, D. (ed.). The Slavic Word. The Hague: Mouton.

Orlova, V. G. (1970). Obrazovanie severnorusskogo narečija i srednerusskich govorov. Moskva: Nauka.

Péškovskij, A. M. (1938). Russkij syntaxsis v naučnom osveščenii. Moskva: Učpedgiz.

Postal, P. (1968). Aspects of Phonological Theory. New York: Harper and Row.

Postal, P. (1970). "On So-called Pronouns in English". in Jacobs, R. A. and Rosenbaum, P. S. Readings in English Transformational Grammar. Waltham, Massachusetts: Ginn and Company.

Potebnja, A. A. (1941). *Iz zapisok po Russkoj grammatike, Vol. IV*. Moskva: Akademija Nauk.

Ragsdale, J. D. (1967). "Issues in Phonological Theory". *Quarterly Journal of Speech* 53: 256-263.

Regier, P. J. (1974). "A Descriptive Formalism for Russian Derivational Morphology". Unpublished paper presented at the Banff 1974 International Conference.

Ross, J. R. (1968). "On Declarative Sentences", pp. 222-272, Jacobs, R. A. and Rosenbaum, P. S. (eds.). *Readings in English Transformational Grammar*. Walthan, Massachusetts: Ginn.

Ružička, R. (1954). "Einführung in die Flexion und Aspektbildung des russischen verbs", pp. 9-11. Daum, E. and Schenk, W. *Die Russischen Verben*. Leipzig: Veb Verlag Enzyklopadie.

Sadock, J. M. (1969). "Superhypersentences". *Papers in Linguistics* 1.1: 1-15.

Sadock, J. M. (1970). "Whimperatives", pp. 223-239, Sadock, J. M. and Vanek, A. L. (eds.). *Studies Presented to Robert B. Lees by his Students*. Edmonton: Linguistic Research Inc.

Sanders, G. A. (1970). "Constraints on Constituent Ordering". *Papers in Linguistics* 2.3: 460-502.

Schaarschmidt, G. H. (1970). "Subordinate Subject Deletion in Russian". *Canadian Journal of Linguistics* 16: 1-17.

Schane, S. A. (1967). "Bibliographie de la phonologie générative". *Langages* 8: 124-131.

Schane, S. A. (1973). *Generative Phonology*. Englewood Cliffs, N.J.: Prentice Hall, Inc.

Scholes, R. J. (1971). *Acoustic Cues for Constituent Structure*. The Hague: Mouton.

Shapiro, M. (1967). "Remarks on Phonological Boundaries in Russian". *Slavic and East European Journal* 11.4: 433-441.

Shapiro, M. (1969). *Aspects of Russian Morphology, a Semiotic Investigation*. Cambridge, Massachusetts: Slavic Publishers Inc.

Shevelov, G. Y. (1965). *A Prehistory of Slavic*. New York: Columbia University Press.

Švedova, N. Ju. (1970). *Grammatika sovremennogo russkogo jazyka*. Moskva: Nauka.

Stankiewicz, E. (1966). "Slavic Morphophonemics in its Typological and Diachronic Aspects", pp. 495-520. Sebeok, T. A. (ed.). *Current Trends in Linguistics, Vol. III. Theoretical Foundations*. The Hague: Mouton.

Stankiewicz, E. (1968). "The Accent Patterns of the Slavic Verb", pp. 359-378. Kučera, H. (ed.). *American Contributions to the Sixth International Congress of Slavists, Vol. I.Linguistic Contributions*. The Hague: Mouton.

Thelin, N. B. (1973). "On Stem Formation, Conjugation and Accentuation of the Russian Verb". *Scando-Slavica* 19: 83-102.

Tixonov, A. N. (1967). "O granicax russkogo sprjaženija". *Russkij Jazyk v Školax* 1: 56-62.

Trager, G. L. and Bloch, B. (1941). "The Syllabic Phonemes of English". *Language* 17: 223-246.

Trubeckoj, N. S. (1969). *Principles of Phonology*, Baltaxe, C. A. M., translator. Berkeley: University of California Press.

Vaillant, A. (1966). *Grammaire Comparée des Langues Slaves, Tom III Le verbe*. Paris: Klincksieck.

Van Dijk, T. A. (1972). *Some Aspects of Text Grammars*. The Hague: Mouton.

Vinogradov, V. V. (1947). *Russkij jazyk*. Moskva: Učpedgiz. (reprint (1972). Moskva: Vysšaja Škola.)

Wells, R. S. (1947). "Immediate Constituents". *Language* 23: 81-117.

Wilbur, R. B. (1973). *The Phonology of Reduplication*. Ph.D. dissertation, University of Rochester. Mimeographed, Bloomington: Indiana University Linguistic Club.

Worth, D. S. (1967). "The Notion of 'Stem' in Russian Flexion and Derivation", pp. 2269-2288. *To Honor Roman Jakobson*, *Vol. III.* The Hague: Mouton.

Worth, D. S. (1968). "'Surface Structure' and 'Deep Structure' in Slavic Morphology", pp. 395-427. Kučera, M. (ed.). *American Contributions to the Sixth International Congress of Slavists*, *Vol. I. Linguistic Contributions*. The Hague: Mouton.

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